The Canadian Medical Association Journal

ANNUAL MEETING - C.M.A. — QUEBEC - JUNE 11 - 15, 1956

VOLUME 74 • NUMBER 8 — TORONTO • APRIL 15, 1956

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Published twice a month by THE CANADIAN MEDICAL ASSOCIATION, 150 St. George Street, Toronto 5.
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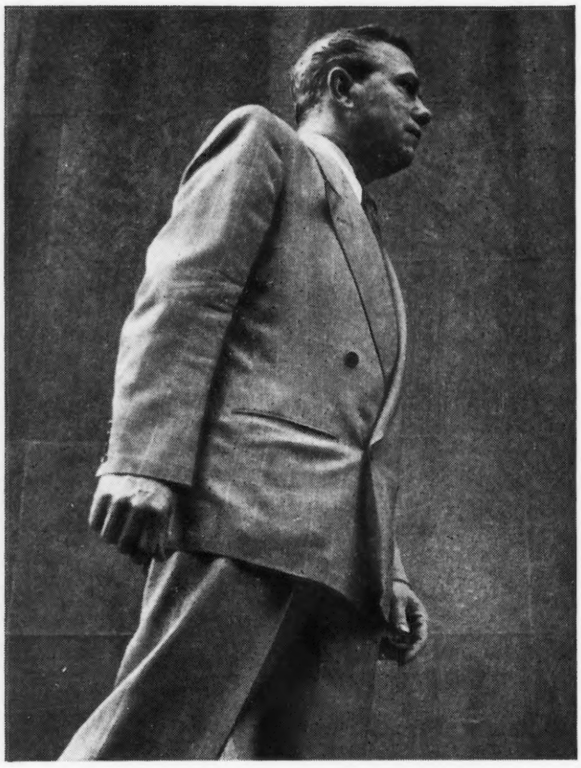
Patients, while on placebos, could take an average of only 96 steps before pain developed.[1]



While taking Peritrate, average number of steps increased to 144 without pain.[1]

To prevent attacks in angina pectoris

CLINICAL EVIDENCE

In a group studied by Humphreys *et al.* improvement in exercise tolerance was noted *in every patient*. The average number of steps increased from 96 to 144—"an improvement of 50 per cent."[1]

In terms of over-all improvement, these investigators noted that, for the entire series (125 patients), those successfully treated found that Peritrate usually

- ***reduced the number of attacks of angina pectoris***
- ***reduced the severity and duration of attacks not prevented***
- ***reduced the nitroglycerin requirement.***

Effective in 4 out of 5 patients—consistently

Successful results have been obtained consistently in three studies to date in which the investigators report improvement in almost an identical percentage of their patients:

Humphreys *et al.*..... 78.4% had fewer attacks[1]
Plotz..... 80% had fewer attacks[2]
Dailheu..... 80% had fewer attacks[3]

BIBLIOGRAPHY:

1. Humphreys, P., *et al.*: Angiology 3:1 (Feb.) 1952.
2. Plotz, M.: New York State J. Med. 52:2012 (Aug. 15) 1952.
3. Dailheu-Geoffroy, P.: L'Ouest Médical, vol. 3 (July) 1950.

Peritrate

(BRAND OF PENTAERYTHRITOL TETRANITRATE)

WARNER-CHILCOTT
Laboratories DIV WM. R. WARNER & CO. LTD.
TORONTO ONTARIO

ANAFER

"...the least toxic of all the iron preparations."*

Anafer is the new B.D.H. preparation of ferrous sulphate with vitamins C and K. Clinical trials have shown that Anafer provides effective iron therapy with remarkable freedom from gastrointestinal disturbance. Even at twice the recommended dosage level it was found that the tablets were always well tolerated.** This was particularly evident in those cases where other iron preparations had previously caused severe gastrointestinal upset. On the basis of his observations, Gillhespy* concluded that Anafer "is the least toxic of all the iron preparations and should be used in the treatment of hypochromic anaemia."

Dose: One tablet three times daily, or as indicated by the response.
Children: One tablet once or twice a day.

Each sugar-coated tablet contains:

Ferrous Sulphate, Exsiccated	200 mg.
(equivalent to Ferrous Sulphate B.P. 4.3 gr.)	
Ascorbic Acid	10.0 mg.
Menadione (as the diacetyl derivative)	1.5 mg.

In bottles of 100 and 1000 tablets.

R. O. Gillhespy, Med. Press 231:112 (Feb. 3) 1954.

***P. P. Turner, Personal Communication.*

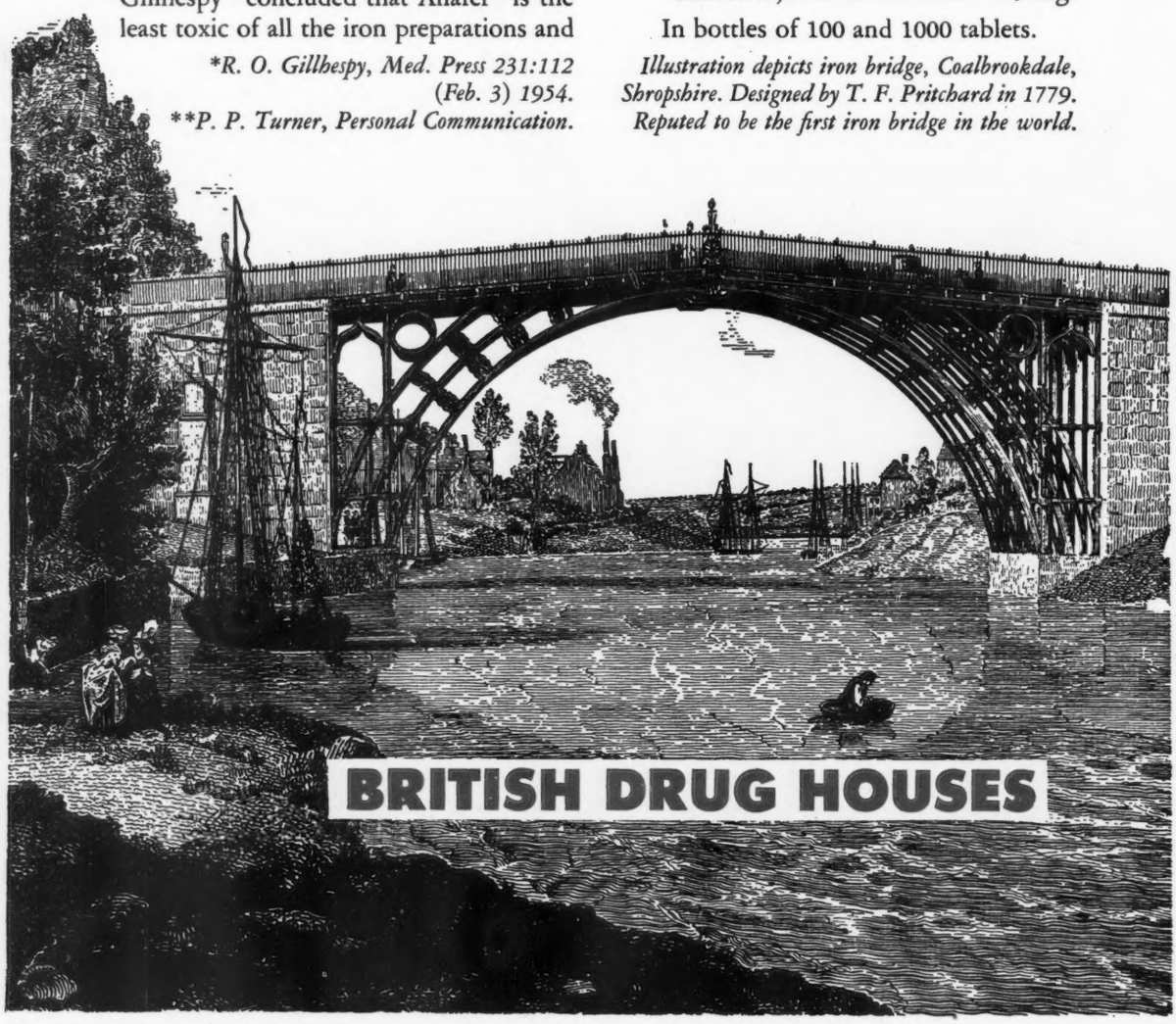


Illustration depicts iron bridge, Coalbrookdale, Shropshire. Designed by T. F. Pritchard in 1779. Reputed to be the first iron bridge in the world.

SYNKAVITE

'ROCHE'

potent, water-soluble

VITAMIN K ANALOGUE

For the control and prevention of hypoprothrombinemia

- in the newborn —
- following tonsillectomy, oral and plastic surgery, and surgery on the jaundiced patient —
- induced by dicoumarol and other anticoagulants —
- due to impaired intestinal synthesis caused by antibiotics, salicylates, sulfonamides and barbiturates.

• SYNKAVITE 'ROCHE'

Brand of sodium menadiol diphosphate (tetrasodium salt of diphosphoric acid ester of 2-methyl-1,4-naphthohydroquinone).

• SYNKAVITE 'ROCHE'

For parenteral use . . . Ampoules, 5 mg./1 cc.; 10 mg./1 cc.; 75 mg./2 cc.

For oral use (no additional bile salts necessary) . . . Tablets, 5 mg.

HOFFMANN - LA ROCHE LIMITED - MONTREAL

polycycline*

aqueous pediatric drops

MAXIMUM TOLERANCE pH 7.5 (NEUTRAL)

READY-TO-USE • STABLE

Miscible with orange juice, formula or milk.

Stable for 24 months at room temperature.

Calibrated dropper supplied with 10 cc. bottle for accurate dosage and easy administration.

INDICATED against a large variety of Gram-positive and Gram-negative organisms, certain rickettsiae, large viruses and organisms resistant to other antibiotics.

DOSAGE is approximately 10 mg. per pound of body weight per 24 hours.

*Trademark

BRISTOL LABORATORIES

OF CANADA LIMITED, 286 St. Paul Street West, Montreal, P.Q.

Can you bring his fever down, doctor?

Step by step you begin narrowing down the possibilities. Finally, you arrive at a conclusion and are able to diagnose the case. The infection may be Gram-positive, Gram-negative, pneumococcal, or meningococcal. Or, rickettsiae or other large viruses and organisms resistant to other antibiotics may be causing the infection. In such cases, POLYCYCLINE AQUEOUS PEDIATRIC DROPS have been proven particularly effective. POLYCYCLINE contains Calcium Tetracycline equivalent to 100 mg. of Tetracycline HCl, in a pleasant-tasting cherry-flavoured aqueous vehicle.

Bristol

Thirty Years Ago . . .

From the Journal of April, 1926

QUEBEC

The Provincial Secretary has announced his intention of submitting an amendment to Montreal's charter in the interest of public health to provide for the placarding of unsanitary dwellings. The placarding of unsanitary dwellings would prevent their being rented and would force the landlord to do away with overcrowding, etc.

EDITORIAL THOUGHTS

In a long editorial on extrapleural thoracoplasty, Dr. Archibald comes to the conclusion that in spite of much ill advised and uncritical enthusiasm together with much ignorant and equally uncritical obstruction, operation, even bloody operation, has won its assured place in the treatment of tuberculosis. He further says that the argument as to the relative advantages of operation and artificial pneumothorax goes on, and the tide seems to be turning in favour of thoracoplasty. His prediction that "surgery has put forward nothing for many years past of greater credit to its science" has been amply borne out in the years since this was written.

In a discussion of vitamin B deficiency, Professor Plimmer's experiments on animals are quoted and the possibility is suggested that a large proportion of the colics and more serious disorders of the human alimentary tract may be attributed to a deficiency of vitamin B in the diet.

a general analgesic

for the relief of

PAIN

following trauma or operative procedures • arthritis • sciatica lumbago • dysmenorrhea • cancer

"ACETOPHEN" COMPOUND *with* CODEINE

Acetophen	3½ gr.
Phenacetin	2½ gr.
Caffeine Citrate	½ gr.
CODEINE PHOSPHATE . .	1/8 gr.
	1/4 gr.
	1/2 gr.
	1 gr.

"222" TABLETS (white)
Also available as 262 Tablets, grey

Ⓝ **"282" TABLETS** (yellow)

Ⓝ **"292" TABLETS** (pink)

Ⓝ **"294" TABLETS** (white)

Action Starts Immediately

DOSAGE: One to two tablets as required.

Packaged as per your prescription.

Ⓝ Telephone narcotic prescription permitted.

"Acetophen" denotes "Frosst" brand of acetylsalicylic acid.

Frosst

Charles E. Frosst & Co.
MONTREAL CANADA

Canad. M. A. J.
April 15, 1956, Vol. 74

A Concerted Attack on...

PEPTIC ULCER

It is recognized that a peptic ulcer will heal, and that recurrences may be prevented, when the following conditions are maintained:

- **The gastric contents kept continuously free of acid;**
- **Enzymatic activity in the stomach reduced to a minimum;**
- **Emotional factors controlled;**

Nutrition maintained.

"Restropin" Compound presents three therapeutic agents:

ANTICHOLINERGIC

Methylhyoscine bromide

One of the most potent antispasmodic and anti-secretory parasympatholytic compounds shown to be clinically selective and effective.

SEDATIVE

Butabarbital

A non-cumulative sedative which, in small doses, reduces sensitivity to disturbing situations of daily life without seriously impairing efficiency.

ANTACID

Aluminum glycinate

A stable, non-absorbable, acid-neutralizing agent with a prompt action and prolonged effect. In 87% of patients with peptic ulcer excellent or good therapeutic results were obtained.[1]

These agents unite to achieve neurogenic and chemical control of gastric secretions with mild sedation, thus providing conditions for peptic ulcer therapy the principles of which have been well established.[2]

CAUTION

Preparations containing methylhyoscine bromide are contraindicated in patients with certain types of cardiac arrythmias.

When the recommended dose is exceeded, and in some patients with average therapeutic doses, one or more of the following side-effects have been noted and require reduction of the dose: dryness of the mouth, blurring of vision, constipation, difficulty in starting urination, weakness and headache.

Frosst

1 The antacid effect of dihydroxy aluminum aminoacetate and its use in the treatment of peptic ulcer. Rider, van de Reis, Gibbs, Lee and Swader, University of California School of Medicine. Scientific Exhibit, 104th Annual Meeting, A.M.A., 1955.

2 An experiment in treatment of peptic ulcer with unrestricted diet. Marshall. Scientific Exhibit, 102nd Annual Meeting, A.M.A., 1953.

ANTICHOLINERGIC
SEDATIVE
ANTACID

"RESTROPIN" COMPOUND

TABLET No. 801 "Frosst"

Each tablet contains:

Restropin bromide ..... 2.5 mg. (1/25 gr.)
(Methylhyoscine bromide)
Alamino (Aluminum glycinate, basic*) ..... 0.5 G. (7½ gr.)
Noctinal (Butabarbital NNR) ..... 16 mg. (¼ gr.)

DOSAGE: One tablet before each meal and one or two tablets at bedtime.

Packaged in bottles of 100 tablets.

ANTICHOLINERGIC
SEDATIVE

"RESTROPINAL" TABLETS

TABLET No. 452 "Frosst"

Each sugar-coated tablet contains:

Restropin bromide ..... 2.5 mg. (1/25 gr.)
(Methylhyoscine bromide)
Noctinal (Butabarbital NNR) ..... 16 mg. (¼ gr.)

DOSAGE: One tablet before each meal and one or two tablets at bedtime.

Packaged in bottles of 100 tablets.

"RESTROPINAL" ELIXIR

ELIXIR No. 607 "Frosst"

Each 5 cc. teaspoonful contains:

Restropin bromide ..... 1.25 mg. (1/50 gr.)
(Methylhyoscine bromide)
Noctinal (Butabarbital NNR) ..... 8 mg. (⅛ gr.)

DOSAGE: One to two teaspoonfuls before each meal and at bedtime.

Packaged in bottles of 16 fluid ounces.

Occasionally at the outset and more frequently after initial treatment with Restropin Compound, adequate control of gastric secretion may be obtained by the administration of the anticholinergic agent alone:

ANTICHOLINERGIC

"RESTROPIN" PLAIN

TABLET No. 451 "Frosst"

Each sugar-coated tablet contains:

Restropin bromide ..... 2.5 mg. (1/25 gr.)
(Methylhyoscine bromide)

DOSAGE: One tablet before each meal and one or two tablets at bedtime.

Packaged in bottles of 100 tablets.

SEDATIVE

"NOCTINAL"

TABLET No. 439 "Frosst"

Butabarbital NNR ..... 16 mg. (¼ gr.)

DOSAGE: One or two tablets as required.

Packaged in bottles of 100 tablets.

ANTACID

"ALAMINO"

TABLET No. 381 "Frosst"

Each tablet contains:

Alamino ..... 0.5 G. (7½ gr.)
(Aluminum glycinate, basic*)

DOSAGE: One to two tablets before each meal and at bedtime.

Bottles of 100 tablets.

SUSPENSION No. 975 "Frosst"

Each 4 cc. teaspoonful contains:

Alamino ..... 0.5 G. (7½ gr.)
(Aluminum glycinate, basic*)

DOSAGE: One to two teaspoonfuls (4 to 8 cc.) before each meal and at bedtime.

Bottles of 16 fluid ounces.

*Patented, 1951

Charles E. Frosst & Co.
MONTREAL CANADA

"FLAVEDRIN"

ANTISEPTIC • DECONGESTANT

Sprayed or dropped into the nose, aqueous isotonic Flavedrin provides quick relief and comfort for the patient with a congested running nose. The mucous membrane shrinks, secretion is reduced and ventilation and drainage of accessory sinuses promoted. The antiseptic component is effective against a large number of pathogenic organisms.

FOR CHILDREN

"FLAVEDRIN" MILD

Ephedrine hydrochloride 0.3%
Aminacrine hydrochloride BP 0.1%

Packaged in 1/2 oz. bottles with dropper.

FOR ADULTS

"FLAVEDRIN"

Ephedrine hydrochloride 1.0%
Aminacrine hydrochloride BP 0.1%

Packaged in 1 oz. bottles with dropper.

ADMINISTRATION: Spray or instil three or four drops into the nostrils every three or four hours.

WHEN ANTIBIOTICS ARE INDICATED

"FLAVACO" with HYDROCORTISONE NASAL SPRAY

No. 929 "Frosst"

An isotonic, aqueous solution containing:

Hydrocortisone 0.02%
Gramicidin 0.005%
Neomycin sulphate 0.1%
Ephedrine hydrochloride 0.3%
Aminacrine hydrochloride 0.1%

"FLAVACO" NASAL SPRAY

No. 928 "Frosst"

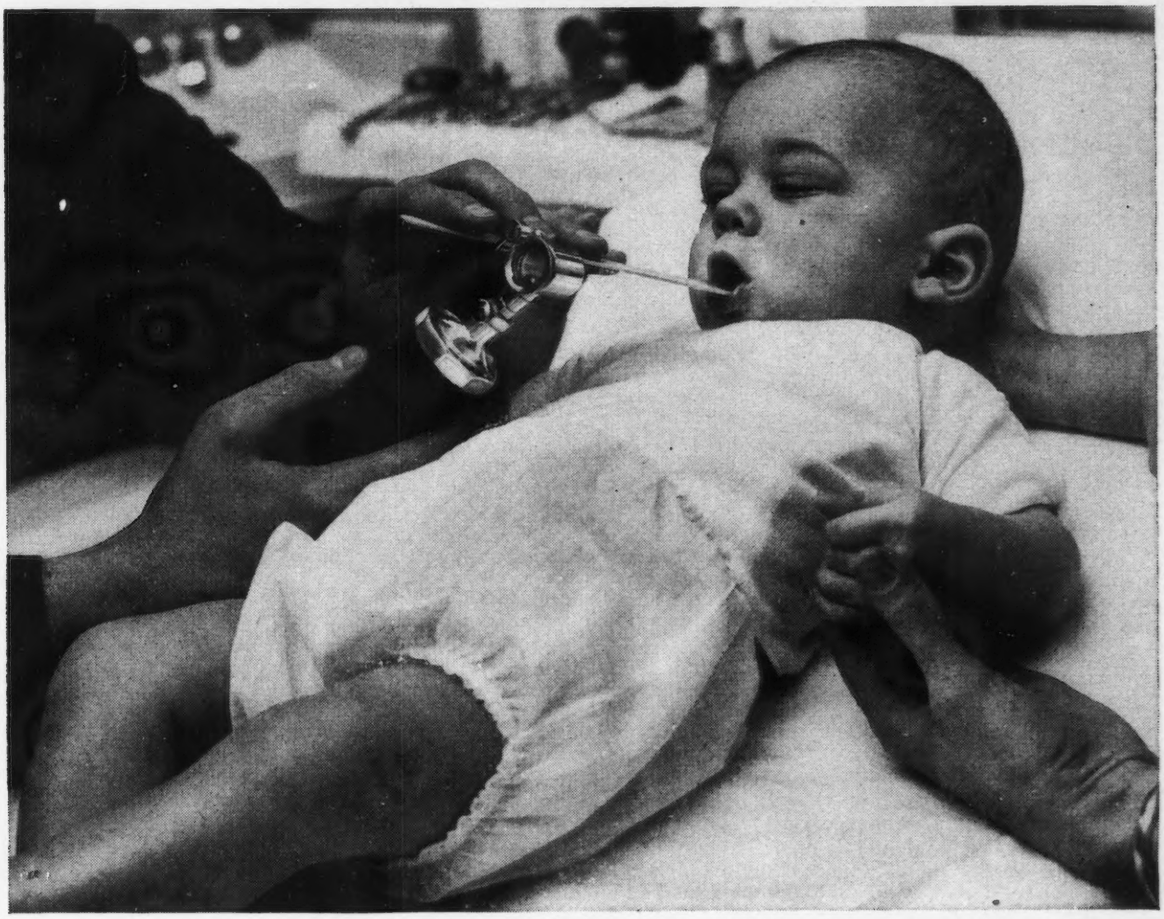
Same formula as No. 929 "Frosst", but without hydrocortisone.

PACKAGE
15 cc. plastic spray bottle suitable for use as an atomizer or dropper.

ADMINISTRATION
SPRAY or INSTIL three or four drops into the nostrils every three or four hours.

Frosst

Charles E. Frosst & Co.
MONTREAL CANADA



"Meat protein as well retained as milk protein..."

EVEN premature infants digested, utilized and retained the proteins and fat in specially prepared Meats for Babies according to Sisson, Emmel & Filer, "Meat in the Diet of Prematures", Pediatrics, 7, 89 (1951).

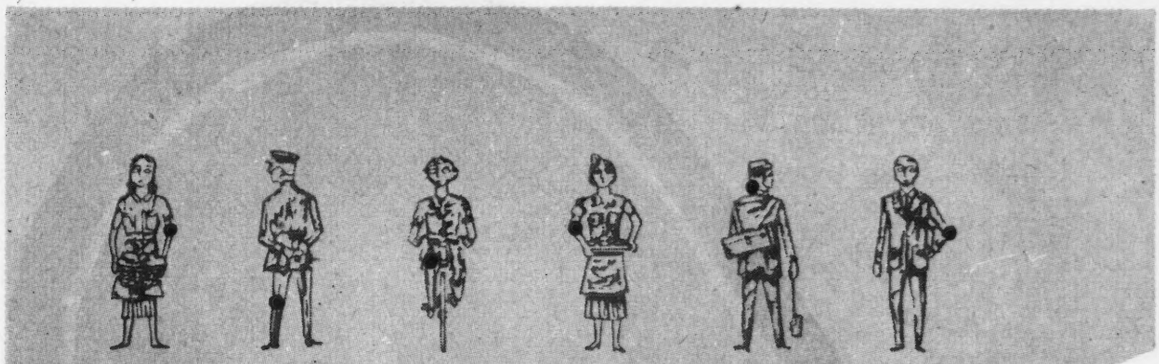
The authors state, in part: "Meat protein is as well retained and utilized as milk protein by the premature infant and is therefore as safe and efficient a source of protein as milk. The fat absorption of the premature infant is not significantly altered when the milk in the diet is partly or wholly replaced by meat fat or meat fat and olive oil."

Swift's Meats for Babies was the original product of this kind placed on the market. Prepared from only fine, lean meat, the food is cooked and milled to a fine purée. The texture is soft, moist and easily fed in formula or for initial spoon feeding just as it comes from the can. There are seven kinds for variety and special conditions: Beef, Lamb, Pork, Veal, Liver, Heart, Liver and Bacon, and also Swift's Egg Yolks for Babies, Salmon Seafood for Babies and the chopped Swift's Meats for Juniors.

7-56

Meats for Babies
SWIFT'S
most precious product
Swift
To Serve Your Family Better

SWIFT CANADIAN CO., LIMITED.



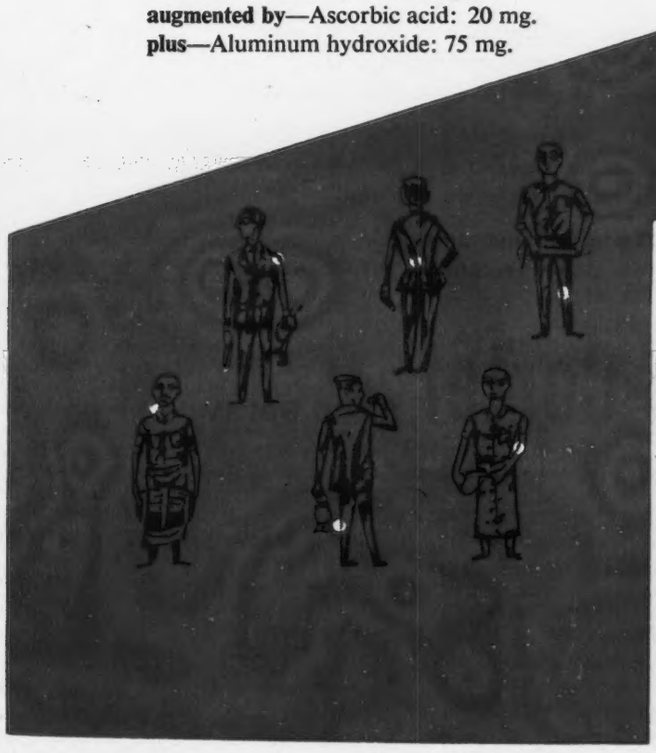
NOW...unexcelled relief in nonspecific rheumatic disorders

NEW SIGMAGEN

SAFE, RELIABLE COMBINED CORTICOID-ANALGESIC THERAPY INDICATED IN
muscular rheumatism—mild rheumatoid arthritis—myalgia—mild spondylitis—fibrositis—myositis—subacute gout—pleurodynia—tenosynovitis—panniculitis—frozen-shoulder

New SIGMAGEN combines
best of the old—Acetylsalicylic acid: 325 mg.
potentiated by the best of the new—
METICORTEN: 0.75 mg.
augmented by—Ascorbic acid: 20 mg.
plus—Aluminum hydroxide: 75 mg.

Clinical studies have shown that the concomitant administration of corticoids and salicylates not only enables a lower dose of each to be given to achieve an equal or better degree of therapeutic effect but also decreases the likelihood of undesirable effects. Sigmagen is of particular value in patients no longer responding to salicylates alone.



AVERAGE DOSAGE:
1 to 2 tablets 4 times daily after meals and at bedtime.

SCHERING

Schering

Prompt and prolonged relief from nasal congestion with Neo-Cortef Nasal Spray:

• *Anti-inflammatory hydrocortisone*
to reduce local edema and hyperemia
and to block allergic tissue-reaction

• *Vasoconstricting phenylephrine*
to relieve vascular congestion
without "congestive rebound"

Plus the wide-range antibiotic, neomycin,
to combat secondary infection

Neo-Cortef* nasal spray

in allergic rhinitis • allergic rhinitis with polyps • chronic and acute nasal infection

Dosage: One application in each nostril 3 or 4 times daily.

Each cc. contains:

Neomycin Sulfate	5 mg.
Phenylephrine Hydrochloride	2.5 mg.
Hydrocortisone Acetate	5 mg. (0.5%)

In plastic squeeze bottles of 15 cc.

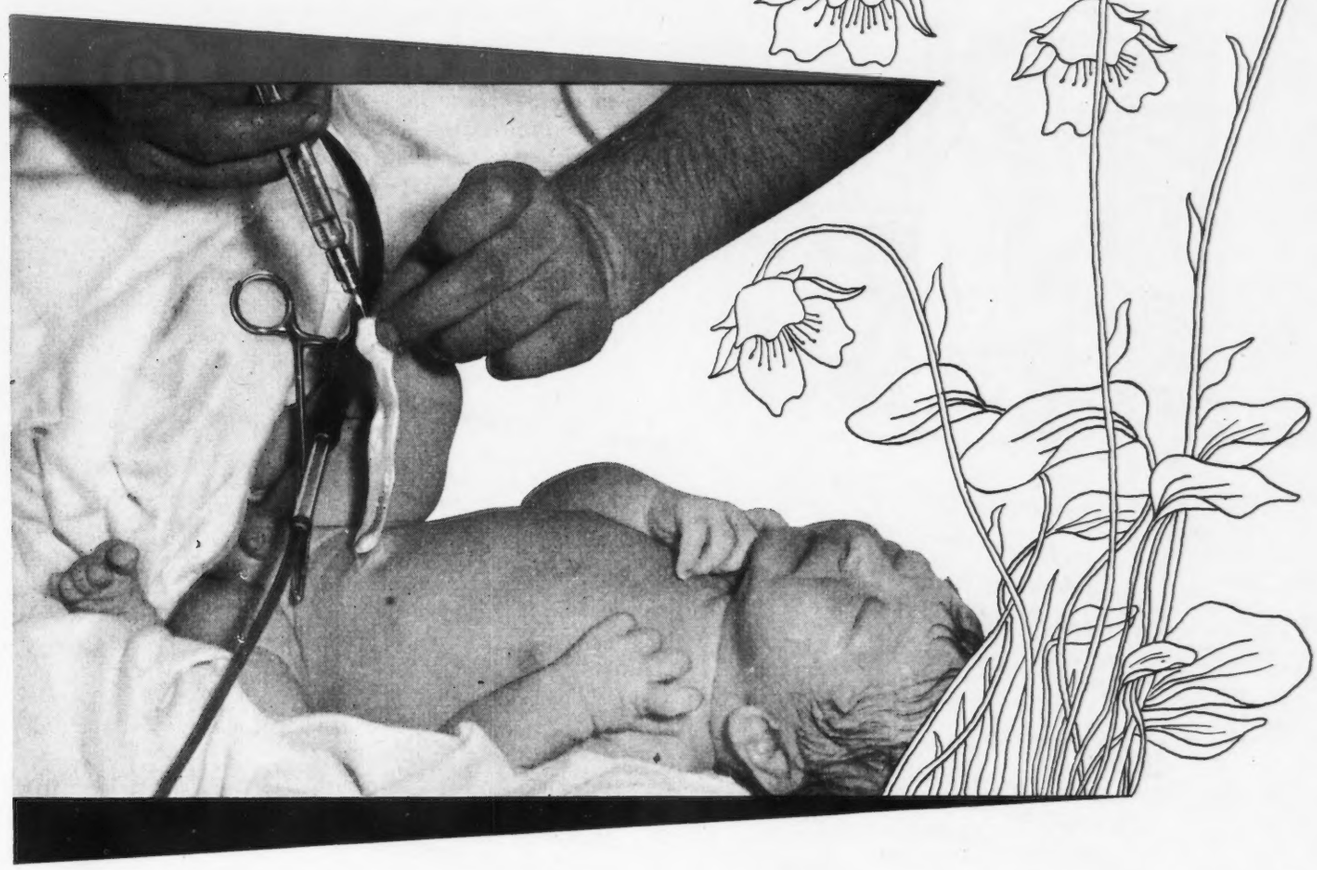
*Registered Trademark

Upjohn *Fine pharmaceuticals since 1886*
The Upjohn Company of Canada, Toronto, Ontario

'Nalline' HYDROCHLORIDE

(NALORPHINE HYDROCHLORIDE MERCK)

Specific and effective therapy for narcotic-depressed newborns



In neonatal apnea due to maternal narcosis, NALLINE may be injected directly into the umbilical vein of the infant to combat the depressant effects of the narcotic. This specific treatment promptly re-establishes respiration and in most cases usually eliminates the need for other methods of resuscitation. NALLINE may also be used prophylactically. When administered to narcotized parturient women five to fifteen minutes before delivery, NALLINE causes a significant decrease in the incidence of neonatal apnea requiring revival measures. At the same time, NALLINE appreciably shortens the time for first gasp and the time for establishing respiration.

OTHER INDICATIONS: Respiratory depression and circulatory collapse due to morphine, heroin, methadone, Dromoran®, Levo-Dromoran®, Nisentil®, Dilaudid®, Pantopon®, and Demerol®.

SUPPLIED: In 1-cc. ampuls (5 mg. cc.), for parenteral use. NALLINE comes within the scope of the Opium and Narcotic Drug Act and regulations made thereunder.

NEW DOSAGE FORM: NALLINE Neonatal for injection via the umbilical vein. In 1-cc. ampuls containing 0.2 mg. N-allylnormorphine hydrochloride.

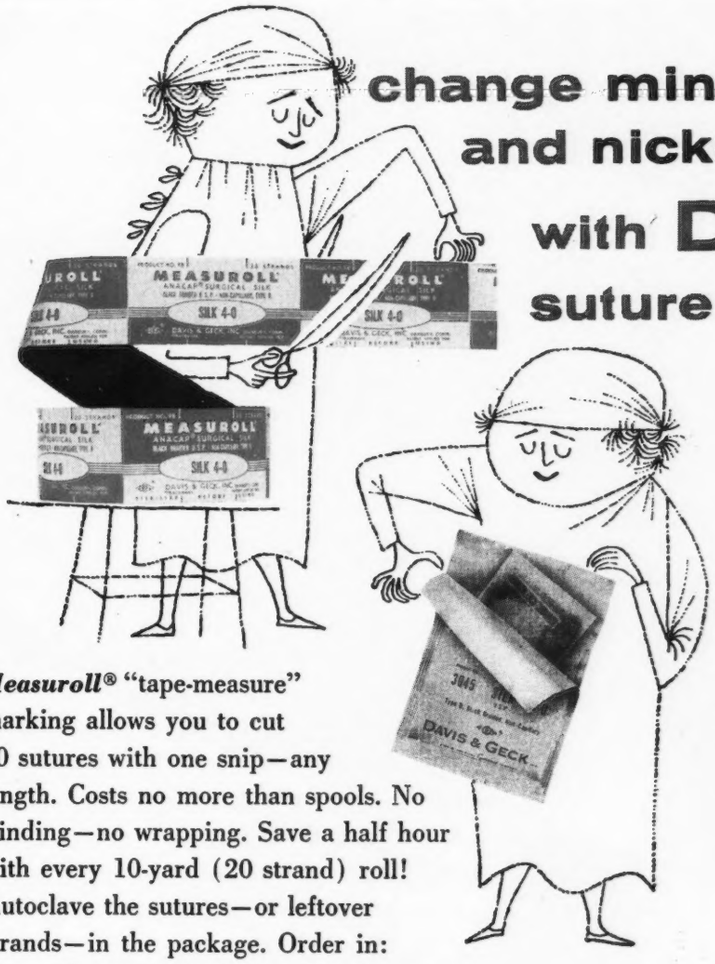
REFERENCE: Eckenhoff, J. E. and Funderburg, L. W., *Am. J. M. Sc.* **228**: 546, November 1954.

MAJOR ADVANTAGES

Promptly increases both minute volume and respiratory rate; does not induce convulsions.

SHARP & DOHME

MONTREAL 30, QUE.
DIVISION OF MERCK & CO. LIMITED



change minutes to seconds and nickels to dollars with D & G suture packs

***Measuroll*®** "tape-measure" marking allows you to cut 20 sutures with one snip—any length. Costs no more than spools. No winding—no wrapping. Save a half hour with every 10-yard (20 strand) roll! Autoclave the sutures—or leftover strands—in the package. Order in: *Anacap® Surgical Silk; Surgical Cotton;* or *Surgaloy® stainless steel multistrand wire*, 10 strands, 10 yds. long.

Measuroll Surgical Cotton

Surgilope Surgical Cotton

Measuroll Anacap Silk

Measuroll Surgaloy

Surgilope Anacap Silk

Surgilope sterile* suture pack opens in an instant. *There are no suture tubes to break.* Just pull the flaps of the sealed foil envelope apart and remove the inner envelope with sterile forceps—or drop it on a sterile table. Saves 66⅔% storage space! Costs less than sterile sutures in tubes. Choose in: *Anacap Surgical Silk* or *Surgical Cotton.*

D & G Anacap Silk threads easily—won't bush or fray, and withstands repeated sterilization. It is smooth, flexible, strong, and has more silk per given suture length due to special techniques developed in D & G's own laboratories.

D & G Surgical Cotton threads easily because it's free of lintels and tightly twisted.

D & G Surgaloy—multistrand stainless steel wire—has exceptional strength with flexibility and freedom from kinking.

The surgeon can use these stronger D & G sutures in smaller diameter sizes—with optimum end results.

D&G®

DAVIS & GECK INC.

A UNIT OF *AMERICAN Cyanamid COMPANY*

Danbury, Connecticut

*TRADE-MARK

Advancing with Surgery

Wherever high B and C therapy is indicated

Before and after surgery
In convalescence
In fatigue and stress

Each Ayerst No. 817 capsule contains:

Vitamin B_{12} (amorphous)	10.0 mcgm.
Thiamine	25.0 mg.
Riboflavin	12.5 mg.
Niacinamide	100.0 mg.
Pyridoxine	1.0 mg.
Calcium d-Pantothenate	10.0 mg.
Vitamin C	150.0 mg.

Ayerst, McKenna & Harrison Limited, Montreal

To hasten post-operative recovery

"Beminal" WITH C

fortis

Ayerst **eight-seventeen (817)**

"Hylenta" CD *tablets* No. 888

Controlled Disintegration

demonstrated by

X-ray studies at a large Montreal Hospital

Plate 1 was taken 25 minutes after ingestion: No perceptible change was observed in the tablet, which was still in the stomach.

Plate 2 was taken at 55 minutes: Disintegration was complete and the penicillin was released for absorption in the upper small intestine.

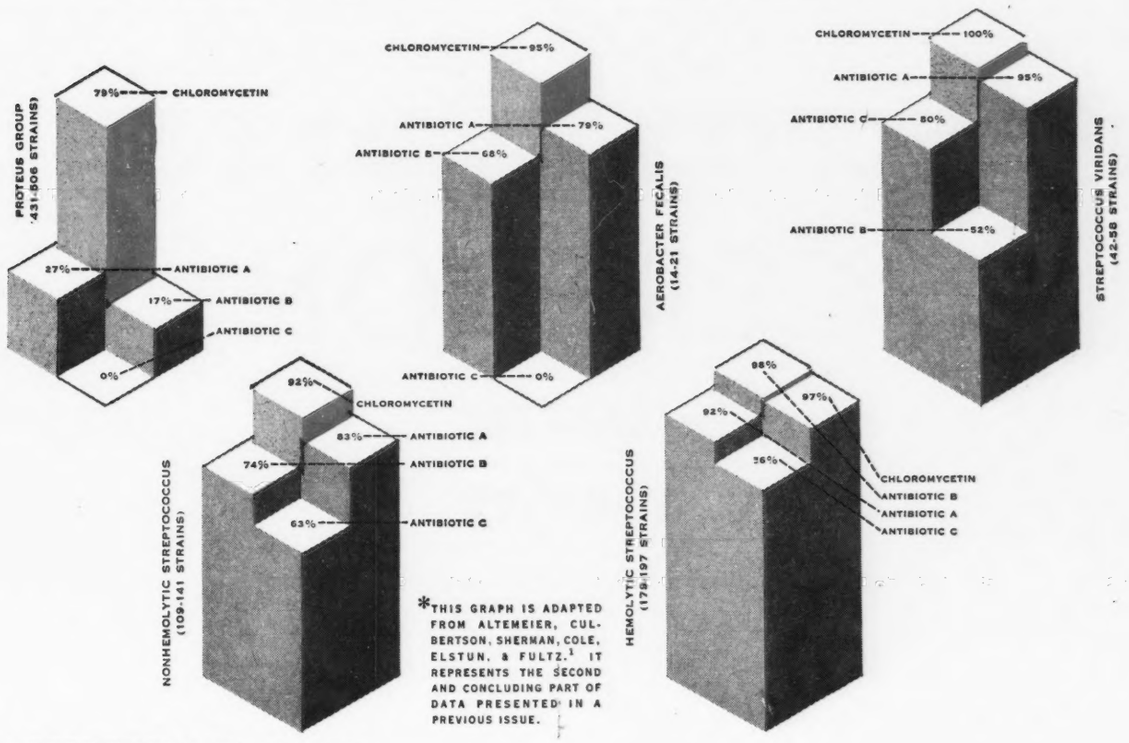
Each "Hylenta" CD* Tablet (scored) contains 500,000 I.U. Penicillin G Potassium, supplied in bottles of 12, 100, and 500.

Ayerst, McKenna & Harrison Limited, Montreal

Ayerst

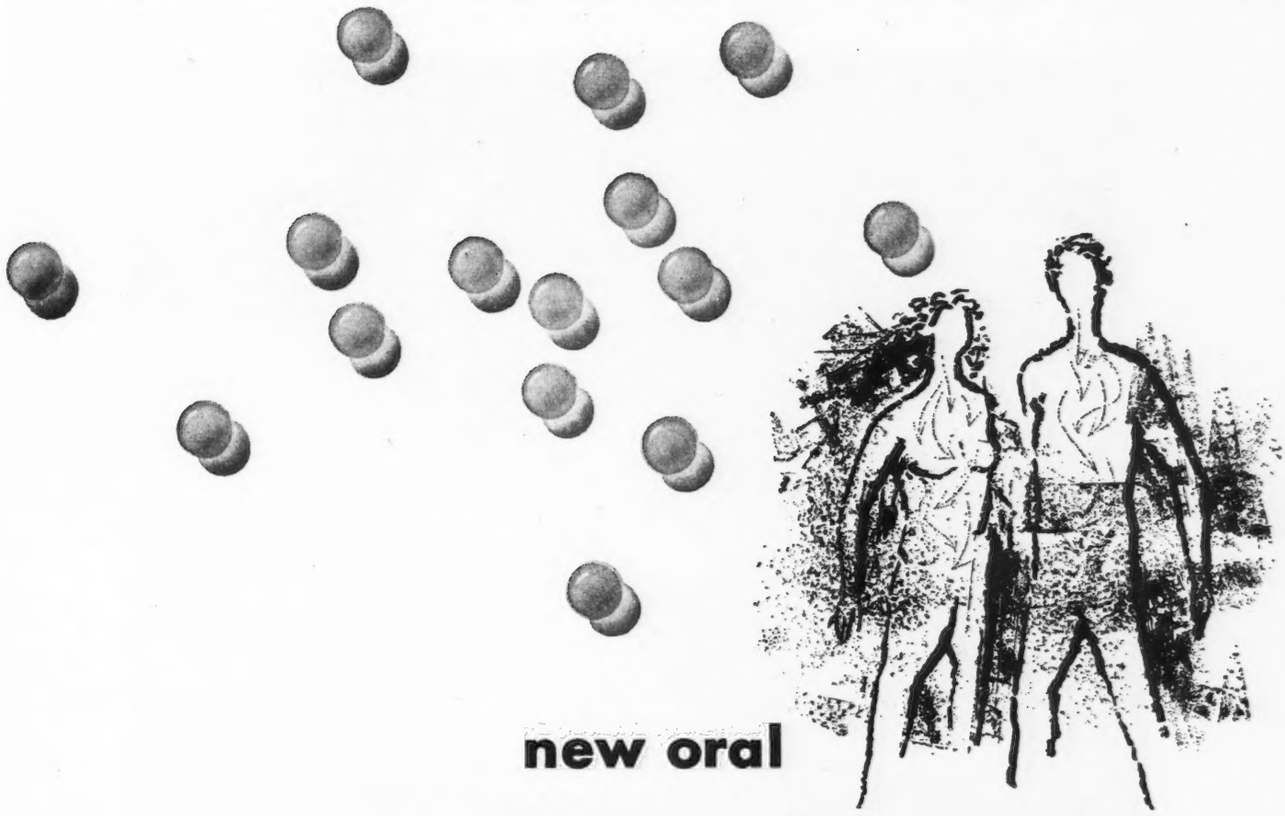
Canad. M. A. J.
April 15, 1956, vol. 74

Sensitivity of Common Pathogens to CHLOROMYCETIN and Three Other Major Antibiotic Agents*



*THIS GRAPH IS ADAPTED FROM ALTEMEIER, CULBERTSON, SHERMAN, COLE, ELSTUN, & FULTZ.[1] IT REPRESENTS THE SECOND AND CONCLUDING PART OF DATA PRESENTED IN A PREVIOUS ISSUE.

REFERENCES: (1) Altemeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* **157**:305, 1955. (2) Weil, A. J., & Stempel, B.: *Antibiotic Med.* **1**:319, 1955. (3) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* **5**:365, 1955. (4) Austrian, R.: *New York J. Med.* **55**:2475, 1955. (5) Murphy, F. D., & Waisbren, B. A., in Murphy, F. D.: Medical Emergencies: Diagnosis and Treatment, ed. 5, Philadelphia, F. A. Davis Company, 1955, p. 557. (6) Felshin, G.: *J. Am. M. Women's A.* **10**:51, 1955. (7) Kass, E. H.: *Am. J. Med.* **18**:764, 1955. (8) Tebrock, H. E., & Young, W. N.: *New York J. Med.* **55**:1159, 1955. (9) Stein, M. H., & Gechman, E.: *New England J. Med.* **252**:906, 1955. (10) Branch, A.; Starkey, D. H.; Rodgers, K. C., & Power, E. E., in Welch, H., & Marti-Ibáñez, F.: Antibiotics Annual, 1954-1955, New York, Medical Encyclopedia, Inc., 1955, p. 1125. (11) Munroe, D. S., & Cockcroft, W. H.: *Canad. M. A. J.* **72**:586, 1955. (12) Norris, J. C.: *M. Times* **83**:253, 1955.



new oral

trichomonacide

TRITHEON* TABLETS

BRAND OF AMINITROZOLE

for male and female

Because of their systemic action, TRITHEON tablets reach resistant trichomonads in their hiding places throughout the genitourinary tract. Unlike local trichomonacides, TRITHEON tablets eradicate the organism in male and female as proved by *negative culture*.

Clinical investigation has demonstrated that TRITHEON tablets administered orally eradicate trichomonads for **culture-proved cure** of more than 70 per cent of female patients whose husbands are treated simultaneously with TRITHEON tablets. Even when only the wife is treated, cures are effected in approximately one-third of the patients.

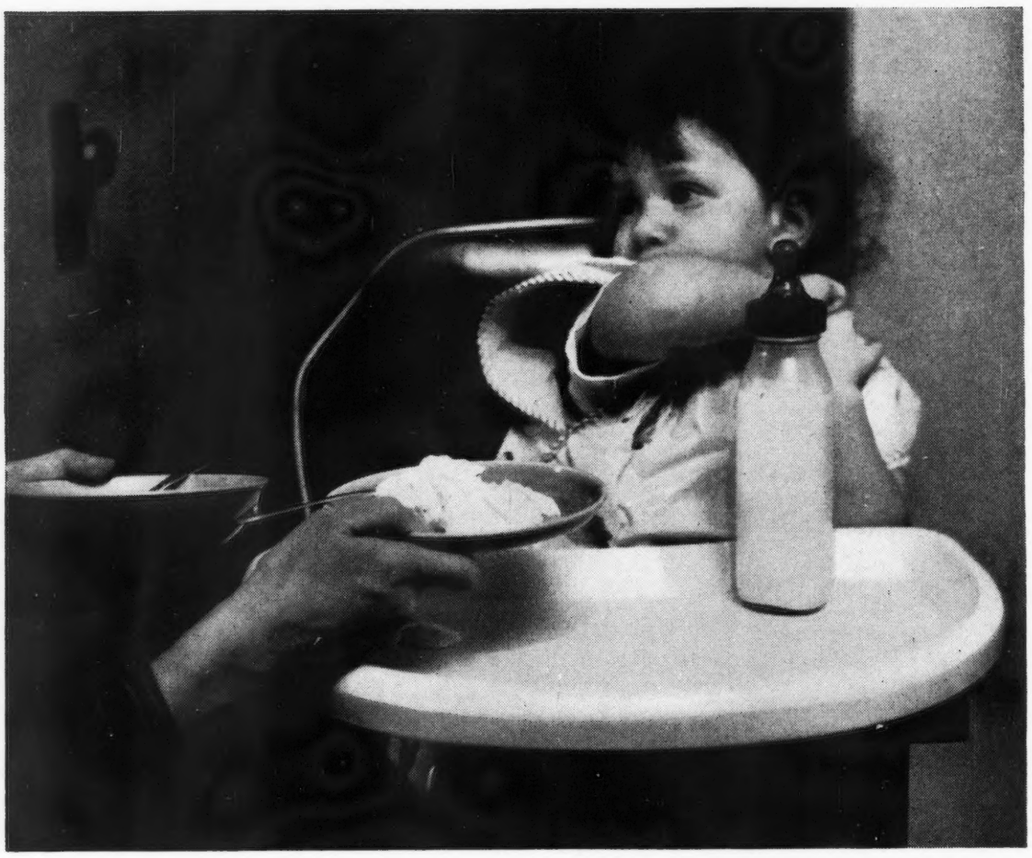
Ortho

Dosage: One tablet three times daily for 10 days.

Available: Bottles of 30 and 180 tablets.

references: (1) Perl, G.; Guttmacher, A. F., and Raggazoni, H. P.: Male and Female Trichomoniasis—Diagnosis and Oral Treatment. Obst. & Gynec. in press. (2) Plentl, A. A.; Gray, M. J.; Neslen, E. D., and Dalali, S. J.: The Clinical Evaluation of 2-Acetylamino-5-Nitrothiazole, An Orally Effective Trichomonacide, Am. J. Obst. & Gynec. 71:116, 1956. (3) Perl, G.; Personal communication.

*TRADE MARK REG'D.



to restore appetite and promote weight gain

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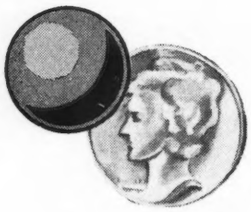

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The Canadian Medical Association Journal

APRIL 15, 1956 • VOL. 74, NO. 8

WHITHER NOW IN ANÆSTHESIA?*

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TO HAVE TAKEN PART in the development of anæsthesia over the past 35 years has been an exciting and satisfying experience. One has only to compare the drugs and methods of 1920 with what we have today to realize that vast changes have taken place—it may not all have been "progress", but it certainly has been fun for the anæsthetist. At the age of 60, one has a right to look back over the milestones which mark a professional career, and to take some pride in a variegated accumulation of knowledge. But I am not going to fall into the enticing temptations of reminiscence. What I want to do for a few minutes, from the vantage point of experience, is to turn my eyes the other way, and to peer into the road which lies ahead. Of course, I don't really know what lies around even the next bend, but I am going to make a few guesses. Here they are.

1. The present trend toward better training in anæsthesia will continue. Organized teaching of anæsthesiology is a very recent development. A few years ago one learned by apprenticeship to one of the masters, or, as I did, by trial and error. The teaching departments in British, Canadian, and American medical schools, the examining specialty boards and hospital accreditation programs were almost entirely non-existent 15 years ago. There has been some criticism that requirements for certification as a specialist are now too exacting and are unrealistic. Perhaps there will be changes in the regulations and even relaxation of the number of years required for training, but I am perfectly certain that systematic teaching of anæsthesiology will continue and become even more important than it is now in every civilized country. The reason for this is that specially qualified anæsthetists render better service to the public than do unqualified anæsthetists. Surgeons and other hospital personnel who see how smoothly and safely anæsthesia is conducted by qualified anæsthetists, and how difficult even the simplest procedures can appear in untrained hands, will continue to demand good training. It will gradually be recognized that expert anæsthetists are needed in small hospitals where so-called "routine" surgery is done, and not only in the large teaching hospitals and in specialized hospitals. A patient can die just as rapidly, just as permanently, and just as unnecessarily during a tonsillectomy or an obstetrical delivery as during a pneumonectomy. The only protection against such tragedies is to have better anæsthetists in a more even distribution throughout small and large cities, and wherever surgery is being done. I predict, therefore, that systematic teaching of anæsthesia will continue on an even larger scale than at present. In the best teaching centres the main emphasis will be on training good clinical anæsthetists rather than specialists in laboratory research. Research, investigation, the elucidation of basic physiological and biochemical mechanisms will continue to be important, but the *great need* of the world as far as anæsthesia is concerned is for more and better clinicians. This fact is recognized by the formation this year of the World Federation of Societies of Anæsthesiologists, which has as its purpose "to make available the highest standards of anæsthesia to all people throughout the world."

2. My next guess is that there will be *increasing attention to problems of pulmonary ventilation and adequate carbon dioxide elimination.* Oxygenation of the patient is not really a problem, but carbon dioxide removal is, especially when natural respiration is interfered with as seriously as occurs with so many of our currently used anæsthetic drugs. I shall not enter here into a discussion of the deleterious effects of excess carbon dioxide, but many thoughtful anæsthetists

*Presented at the B.M.A., C.M.A., O.M.A. Annual Meeting, Toronto, June 1955.

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are becoming increasingly aware of both the harmfulness and the insidious method of onset of this pathological state. Studies with the Liston Becker CO_2 analyzer show that adequate pulmonary ventilation is essential for the maintenance of normal CO_2 levels in patients under prolonged anæsthesia. "Adequate" ventilation usually means more vigorous ventilation than the anæsthetized patient may carry on by his own semi-paralyzed efforts, and it usually means better ventilation than is produced by the tired hand of an anæsthetist squeezing a breathing bag. For this reason many forms of mechanical respirators have been invented, and I am coming rather reluctantly to the conclusion that some such mechanical device will be used in the future for the maintenance of respiration in long operations. I shall not attempt here to list all the ventilators now on the market, or to predict which one will be most widely accepted. Our own limited experience leads us to feel that a simple device such as has been recommended by Pask and others, and which has a negative as well as a positive phase, is most efficient. The so-called "Jefferson Ventilator" is an apparatus of this type, and it has the advantage that it can be instantly switched from automatic to manual control.

Actually automatic or mechanical respirators are not essential to provide good ventilation. A good example of an efficient, simple, portable, manually controlled ventilator is the little Oxford Ventilator which Sir Robert Macintosh has demonstrated for use in even the most primitive operating rooms, and which makes efficient use of "God's oxygen" which is all around us in 20% concentration rather than the 100% variety which comes only in compressed cylinders.

Our studies in CO_2 levels have clearly shown the importance of fresh soda lime in closed circuit or semi-closed circuit anæsthesia. I am convinced that many anæsthetists are much too careless about changing soda lime, and that there is need for a simple method of detecting CO_2 build-up on the inhaling side of the circuit. Such a device already is in existence (Draper's Hi-Co Detector). It can be attached to any gas machine, and should be much more commonly used.

3. My next guess is that there will be *an increasing appreciation of the advantages of the anæsthetic gases, cyclopropane in particular.* Of all anæsthetic drugs the gases alone can be breathed out by the lungs just about as rapidly as they can be breathed in. This property tends to make more controllable the levels of anæsthesia, and controllability is perhaps the most important aspect of expert administration. Nitrous oxide, ethylene and cyclopropane when given with adequate oxygen are relatively non-toxic, do not upset metabolic processes, have good analgesic properties, and are very rapidly eliminated. When used in combination with proper doses of muscle-relaxing agents, one or other of the gases can be used for every type of operation. Cyclopropane has an added advantage of potency, which makes it perhaps the most versatile of all anæsthetic agents. I believe that in the future more thoughtful anæsthetists who believe in the virtues of simplicity will turn to cyclopropane with great satisfaction. Few anæsthetists have had as much experience with this drug as I have had. I began using it in 1933, and I have tried to be critical in my attempts at evaluation, but it still seems to me to be by far the most useful anæsthetic drug. Beecher has preached simplicity in anæsthesia, but his idea of simplicity is to use nothing but ether. In my judgment, from all three aspects of safety, efficiency, and patients' preference, cyclopropane is a much better drug.

Recently Hingson has demonstrated with his "Reserve Midget Portable Anæsthesia Apparatus" how rapidly cyclopropane anæsthesia can be induced in all types of patients, and how small and convenient can be the apparatus for its administration in short operations. This inhaler, or some similar type of machine, will probably make cyclopropane the agent of choice in minor surgery such as simple tooth extraction, reduction of dislocations, paracentesis auri, or incision of abscesses.

I would not be surprised to see a revival of interest in ethylene, because it is a gas which has an impressive record of safety from a pharmacological point of view. Goodman and Gilman in their 1955 edition of "The Pharmacological Basis of Therapeutics" have this to say about ethylene:

> "Ethylene-oxygen mixtures produce satisfactory anæsthesia with practically no untoward effects on vital function. The innocuousness of ethylene is its outstanding advantage. . . . The myocardium is not 'sensitized' to epinephrine. Respiratory and vasomotor depression and metabolic disturbances are not encountered. Pulmonary and renal irritation are absent and salivary and bronchial secretions are not stimulated. Sweating is not produced . . . it is one of the preferred agents for 'poor risk' patients."

In view of these advantages, and because adequate muscle relaxation is no longer a problem, I believe ethylene should be, and will be, much more generally used in cardiac surgery—a field which will undoubtedly be greatly extended in the next few years.

4. As a corollary to the increased use of gas anæsthetics there probably will be *a decrease in the use of intravenous agents, particularly the barbiturates.* Thiopentone and similar drugs have been wonderfully effective in abolishing the fear of anæsthesia, but they are really safe only when used in small doses for the sole purpose of putting patients to sleep. Deep or prolonged anæsthesia with a barbiturate is depressing, uncontrollable, and unnecessarily hazardous. No one knows exactly where the drug goes, how it is broken down, or how and when it leaves the body. Some people who are particularly sensitive to barbiturates may become seriously poisoned. Because none of the barbiturates is ideal as an anæsthetic agent, the search for some better intravenous anæsthetic is continuing, and quite possibly something really good may turn up. I do not believe that the answer lies in drugs like chlorpromazine, reserpine, or Miltown, which certainly have profound pharmacological effects, but which do not seem to offer any particular advantages in anæsthesiology over better understood drugs now in use.

Two new drugs have recently been used as anæsthetic agents, and may have an interesting future. One called Viadril is a steroid compound, and its clinical use has recently been reported by Murphy, Guadagni, and DeBon of the University of California. Viadril may have some advantages over thiopentone and other barbiturates, but is not quite the wonder drug which was proclaimed in recent newspaper reports. It appears to be a good "basal anæsthetic," does not depress respiration or interfere with ventilation when given in reasonable dosage, is compatible with gas anæsthetic agents, and has some analgesic property. The other drug, Dolitrone, is used as a substitute for thiopentone. Lundy reports that he is very favourably impressed by the high degree of analgesia produced by small doses, and the lack of toxic effects. We have used these two drugs in a small series of cases, but I am not prepared to render any judgment as to their value.

For a drug to be widely accepted in clinical anæsthesia it must have properties which make it significantly better than drugs already in use. It must meet some real need, and not be just different or the product of a rival manufacturer. During the next ten years probably hundreds of new drugs will be produced, under thousands of names, and each one will have some enthusiastic proponents. It will be a waste of time to try them clinically if the only difference from satisfactory present drugs is a slight change in chemical formula or some inconsequential variation in the effect on laboratory animals. How much time has been wasted, for instance, in trying to evaluate local anæsthetic agents. As far as I am concerned, the old original ones are still the best—cocaine for topical anæsthesia and procaine for nearly everything else. Before we dabble in clinical experiments we should ask ourselves—what need is this drug likely to meet, and how much better will it be met than with a known agent already at hand?

5. Next I would like to hazard a guess as to *the future of muscle relaxing drugs.* The report last year of Beecher and Todd entitled "A Study of the Deaths Associated with Anesthesia and Surgery" led many surgeons to the conclusion that muscle relaxants have greatly increased the dangers of anæsthesia and that such drugs are all really too toxic for clinical use. I have not found any competent anæsthesiologist who subscribes to this view. Anæsthesiologists realize that all drugs may be toxic when improperly used, and that the intelligent use of muscle relaxants has made many operative procedures both safer and more practicable. People often ask me which is the best muscle relaxant of all the drugs now available. I answer that all the commonly used agents—tubocurarine, Metubine, decamethonium, Flaxedil, succinylcholine, etc.—are equally effective, and are equally dangerous. Some anæsthetists prefer one drug or another, but the dangers of respiratory depression, apnœa and anoxia are common to them all. Safety lies in administration by a skilled, intelligent anæsthetist who knows how to control respiration and how to adjust the dosage to the needs of a particular patient in a particular situation. I am certain that fatalities and morbidity after administration of relaxant drugs have been almost entirely due to their improper or careless use.

I have been particularly interested in succinylcholine because I feel that its property of short action due to rapid hydrolysis represents the

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first important change in muscle relaxants since curare was introduced. Short action makes for controllability, and controllability in anæsthesia should tend toward safety. Generally speaking, in our hands, succinylcholine has been both safe and satisfactory, but it is not ideal and I will not be surprised to see a better drug appear. Dr. Rudolf Frey, Director of Anæsthesiology at Heidelberg University, Germany, has told me of a new short-acting muscle-relaxing drug called Prestonal, which may be of value. It differs from succinylcholine in that it acts like curare by polarization of the end plates, and its action is antagonized by prostigmine. Frey has used Prestonal in over a thousand clinical cases with excellent results.

I believe, therefore, that muscle-relaxing drugs of some kind will continue to have an important place in anæsthesiology. We should reassure our surgical friends on this point.

6. *Cardiac arrest in patients under anæsthesia* has been a disturbing complication frequently reported in recent years. Will this continue in the future? I think it will to some extent, primarily because we are all mortals and no heart goes on forever, and because surgeons are with increasing frequency invading areas in the thorax, the abdomen, and the brain where the reflexes are located which control the heart. Stimulation of these areas is bound occasionally to cause cardiac arrest. However, much can and will be done by anæsthetists to *prevent* cardiac arrest, and I think it should become an extremely rare accident. I read an article recently which reported an incidence of one cardiac arrest in every 858 cases in a general hospital. Such a figure is horrifying, and I am sure is quite avoidable. In my own hospital the incidence is about one case in 10,000. Individualization of the patient's requirements, gentleness in all manipulation, intelligent use of atropine and other autonomic blocking agents, sensible choice of anæsthetic agents, and absolute avoidance of anoxia or excess carbon dioxide should remove the fear of cardiac arrest.

7. *Conduction or Regional Anæsthesia.* I think that in spite of possible neurological sequelæ and legal complications, spinal anæsthesia will continue to have a place in our practice. This is because it is a simple technique, with definite advantages for certain operations and certain types of patients. I believe that spinal anæsthesia will be safer as we learn to pay more attention to the advantages of minimal dosage, dilute solutions and the less toxic drugs.

I do not agree with the opinion that local and regional anæsthesia will be the favourite method for future major surgery. Wherever general anæsthesia has improved in quality there has been a tendency to use fewer regional blocks. The hazards of procedure such as brachial blocks are becoming widely recognized, and toxic reactions from local anæsthetics often outweigh their advantage in routine operations.

8. *Hypothermia.* As soon as a reasonably safe and practicable method is devised for lowering the body temperature, this will become a more common practice in operations which require shutting off of cerebral circulation. There is no doubt that cold brain cells can live longer without oxygen than those in a normal physiological state. However, hypothermia will be reserved for open cardiac surgery, and I can see no reason to believe that it will be advisable for the treatment of patients in shock or for other conditions. The so-called "artificial hibernation" produced by drugs will probably have no important place in future anæsthesiology.

9. My final and perhaps most valid prediction is that *the anæsthetist of future years will acquire the status of a physician consultant*—one who is specially qualified in pharmacology and physiology as well as in the mysteries of electronic recording apparatus and other gadgets. He will be available to his hospital colleagues for advice on problems of respiration, circulation, drug poisoning, gas therapy, postoperative complications and prognosis, as well as for the actual administration of anæsthetics. There is no danger that we will be unemployed in the years ahead.

SUBTERM INDUCTION OF LABOUR IN THE MANAGEMENT OF ERYTHROBLASTOSIS FETALIS

An analysis has been made of 4,000 private patients with 6,003 pregnancies, with special reference to cases of Rh incompatibility, their incidence and their treatment. The last month of gestation in erythroblastotic infants is crucial to the life of the infant. In selected cases as determined by specific criteria, subterm induction offers increased fetal salvage.

Induction must be done only after careful and extensive clinical evaluation of each case. No specific time has been determined arbitrarily for this induction. In the hands of a trained team of obstetrical, pædiatric and laboratory workers this method can be employed successfully, usually without damage to the mother or the infant.—R. A. McLean *et al.: Am. J. Obst. & Gynec.*, 71: 310, 1956.

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ANTIBIOTIC THERAPY: CORRELATION OF CLINICAL RESULTS WITH LABORATORY SENSITIVITY TESTS*

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IN THE PAST, the clinician has had the experience of treating cases successfully with a chosen antibiotic when the organism has been reported resistant to that particular antibiotic by the laboratory; the reverse has also occurred where the organism has been reported sensitive to a chosen antibiotic and poor clinical response has resulted. Consequently, some scepticism has arisen in the minds of the laboratory workers and the clinicians as to whether clinical findings can be correlated with laboratory reports. Friedmann[1] states, "Most cases, too, though infected with an *in vitro* penicillin resistant strain of *Staphylococcus aureus* have clinically responded to penicillin."

In this paper, an attempt is being made to suggest the difficulties, discrepancies and fallacies on both sides in the hope of bringing the two fields more closely together. It might first be stated that there are many variable factors involved which cannot be measured by laboratory methods and which have considerable influence on clinical results. One may take, for example, the individual immune response of the host; the nature and location of the lesion; the extent and degree of inflammatory reaction; the number of organisms in the lesion; the amount of fibrous and granulation tissue present; hence the ability of the antibiotic to penetrate and to concentrate at the site of infection.[2] In spite of these difficulties, the literature abounds in examples of clinical response agreeing with the *in vitro* sensitivity tests. Finally, there is the general but very difficult question of how such infections used to progress before antibiotics were introduced. It is all too easy to forget that non-specific care cured many infections 15 to 20 years ago.

It is not possible to quote many, but some recent reports may be used to illustrate the conflicting factors in analyzing the results. Broom, Martineau and Young,[3] using the Difco disc method for penicillin sensitivity tests, report excellent correlation with treatment of meningococcal and pneumococcal meningitis. However, as sulphadiazine was also used synchronously, the results are open to question. In addition, they report organisms resistant if there is a zone around the highest disc concentration only, which is not the recommendation of the manufacturers. Similarly, Trafton and Lind[4] complicate their findings by changing their original plan of reporting resistance with Difco discs based on their clinical results of therapy. Like many other workers, they also do not separate in the analysis of their results of therapy the percentage of those successfully treated in the sensitive or resistant groups but combine all cases and give the percentage of "cures" in the whole total. In many instances, as for example Linsell and Fletcher[5] using oxytetracycline, therapy was attempted only on organisms found sensitive by a tube dilution method. Weil[6] reports good correlation between clinical response and *in vitro* sensitivity with the Difco disc, but his interpretation of *in vitro* resistance differs from that of Lind although both use the same disc method. The majority of laboratories visited by two of us (A.B., D.H.S.) claim good clinical correlation with the methods they use but seldom have assembled their data for critical scanning.

MATERIAL AND METHOD USED IN ASSESSING CLINICAL CORRELATION

Our present data are drawn from 118 carefully selected cases from the hospitals of the Department of Veterans Affairs across Canada. Selection for assessment depends mostly upon lack of concomitant therapy that might be considered to have a major influence. According to the antibiotic with which they were treated, the cases were: penicillin 49, chloramphenicol 29, chlortetracycline 22, erythromycin 11 and oxytetracycline 7.

Forms were used to record the patient's name, diagnosis and pertinent clinical information; the organisms cultured in each case were listed and their sensitivity tests recorded as found by both the hospital of origin and the

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†Research fellow with Antibiotic Control Laboratory supported by Research Grant, Department of Veterans Affairs (Project 60-51).

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control laboratory; the daily and total doses were shown with the length of time required for treatment. The response to therapy was judged on the basis of four criteria: reduction of fever (F), reduction of exudate (E), depression or disappearance of pathogenic bacteria (B), and over-all clinical improvement (C). Complications were also recorded. For doubtful or controversial cases, the full hospital record was obtained and examined.

In our opinion, the penicillin cases are the most important and the most difficult to assess, partly because this is the only antibiotic against which an enzyme (penicillinase) is produced by certain organisms, notably staphylococci. In consequence, the *in vitro* sensitivity results may be influenced considerably by even small changes in the size of inoculum used, etc. Further, the low toxicity of penicillin enables very large doses to be used when necessary and a wide range of blood levels can be obtained.

LABORATORY DATA ON SENSITIVITY TESTS

The *in vitro* sensitivity tests used in this paper are all based on standardized procedures previously described[7-10] where uniform conditions of inoculum, time of incubation, media and method of reporting, etc., were employed. In preparing this series, assessable cases were found where the infecting organisms had not been included in the monthly quotas sent to the Control Laboratory (41 cases). The results of sensitivity tests, if done by the hospital of origin only, are shown in parentheses. These results were obtained from one of the two standard methods except for some cases with erythromycin where Difco discs only were used (11 cases). The most dilute concentrations to give bacteriostasis when using the various antibiotics are divided into zones for the reporting of "sensitive", "moderately resistant" or "resistant", and these are shown in Table I.

From our past experience we have tried to set the level for resistance so high that no clinical response to therapy should be anticipated. It appears to us that this level is the most important since infections caused by organisms in the two lower categories may respond to therapy. A divergent view is held in many laboratories, where the emphasis seems to be on defining the sensitive zone and placing this at a minimum level so that all organisms in this zone will respond to therapy. There is no objection to this but there should be no implication that all organisms not inhibited at this level are resistant to treatment.

TABLE I.

		Tube dilution	*Agar well*	*Difco disc*
Penicillin.....	S	1.0	1.0	0.5
	MR	10.0	25.0	1.0 or 10
	R	> 10.0	> 25.0	> 10.0
Erythromycin....	S	1.0	5.0	0.5
	MR	25.0	50.0	1.0 or 10
	R	> 25.0	> 50.0	> 10.0
Chlortetracycline	S	1.0	5.0	10.0
Oxytetracycline...	MR	25.0	50.0	30.0 or 60
Tetracycline.....	R	> 25.0	> 50.0	> 60
Chloramphenicol..	S	10.0	50.0	10.0
	MR	100.0	500.0	30.0 or 60
	R	> 100.0	> 500.0	> 60
Streptomycin.....	S	5.0	10.0	1.0
	MR	100.0	500.0	10.0 or 100
	R	> 100.0	> 500.0	> 100.0

NOTES

1. Penicillin strengths are in units per ml. The others are quoted in micrograms per ml.
2. Erythromycin, by our standard methods, is used in the same concentrations as the tetracyclines because of similar dosage and blood levels. The Difco disc concentrations are based on bacterial sensitivity "spectra".
3. Tube dilution and agar well methods call for careful standardization of media, inocula and incubation time as described in previous articles and do not necessarily compare readily with other authors' methods having similar names.

For proper interpretation of any *in vitro* sensitivity tests to antibiotics, the results must be reproducible. The clinician should understand clearly that laboratories may vary their results in testing penicillinase-producing staphylococci against penicillin simply by altering the size of the inoculum. A small percentage of error is to be expected in performing even the best standardized tests. Again reports may vary between different laboratories because they interpret their levels of resistance differently even though the same methods are employed. There are not as yet any accepted standards for estimating *in vitro* resistance locally, nationally or internationally. This is well illustrated in Table II by the different

TABLE II.

COMPARISON OF CONCENTRATIONS OF VARIOUS ANTIBIOTICS USED BY DIFFERENT WORKERS TO DEFINE SENSITIVITY OF STRAINS WITH A SINGLE DISC.

	Meleney & Johnson[11]	*Fairbrother & Martyn*[12]	*Scott*[13]	*Eisenberg & Wagner*[14]
Penicillin.....	1 unit	1.5 units	1 unit	1 unit
Streptomycin.....	25 μ	33 μ	10 μ	15 μ
Chloramphenicol..	—	33 μ	25 μ	15 μ
Chlortetracycline	—	10 μ	50 μ	4 μ
Oxytetracycline...	10 μ	10 μ	—	6 μ
Erythromycin....	—	—	—	—

	Tunevall & Ericsson[15]	*Thompson*[16]	*Gould & Bowie*[17]
Penicillin.....	20 units	20 units	1 unit
Streptomycin.....	50 μ	200 μ	10 μ
Chloramphenicol..	30 μ	50 μ	25 μ
Chlortetracycline	50 μ	50 μ	50 μ
Oxytetracycline...	50 μ	—	10 μ
Erythromycin....	50 μ	—	—

levels used in differentiating treatable from resistant organisms by seven laboratories who prepare a single disc of their own making.

The crux of the matter to the clinical pathologist who desires to assist the clinician by doing *in vitro* tests is to determine a range for penicillin giving *in vitro* sensitivity results which, when reported under one of the above three categories, will parallel the clinical response. The other antibiotics will automatically fall into line if a roughly standard inoculum is used since the results are not changed by moderate variations in the size of the inoculum.

Finally, in comparing methods, tests done by an agar diffusion method appear less affected by changes in size of inoculum than those by the tube dilution method. One disadvantage is that direct readings of quantity per volume are not available since the test is based on diffusion through the agar from a central depot. For this reason, the levels set to delineate zones of resistance *in vitro* bear no particular relation to known blood levels. Similarly, because the broth dilution methods used in different laboratories vary in sensitivity according to inoculum and other factors, direct correlation between *in vitro* and blood concentrations does not necessarily hold. If the clinician is furnished with reproducible results of *in vitro* tests, the response to therapy can be assessed and the levels changed, if necessary, to agree with clinical findings.

Tables III, IV and V summarize the data from the cases studied (118), grouped according to the therapy. In the tables, the report of "sensitive", "moderately resistant" or "resistant" is based on the control laboratory results. A small "r" has been added by the control laboratory where the agar well or disc methods have shown a few resistant colonies growing in an otherwise clearly defined zone of inhibition. Thus a staphylococcus strain may be inhibited by 25 μ/ml. penicillin in the agar well method, but because of the presence of some more resistant colonies the report shown is MR^r. In other cases where there has been a disagreement between the hospital of origin and the control laboratory, the two results are shown, with the results from the hospital laboratory in parentheses. The clinical results are recorded under reduction of fever (F), reduction of exudate (E), suppression of pathogenic bacteria (B) and over-all clinical improvement (C). As stated above, these cases were selected to a great extent because they did not receive any very significant concomitant therapy, and therefore no attempt has been made to show a record of this. Again, an attempt has been made to allow for reasonable expectations of improvement if no antibiotic had been given.

PENICILLIN TREATED CASES (TABLE III)

Table III lists 49 cases of penicillin treated infections, showing the organism, diagnosis, *in vitro* sensitivity, dosage and results of treatment. They are grouped according to the *in vitro* sensitivity of the etiological organisms. In these cases there was no standard dosage, nor in most cases was there any attempt to correlate the amount given with the *in vitro* sensitivity test. For this reason the effect of size of dosage cannot be thoroughly appraised although most of the infections with more resistant organisms received higher dosage.

Of the 9 cases reported as resistant to penicillin, 7 showed no response and 2 some clinical response to therapy—i.e. Cases 4 and 5. In Case 4, the staphylococcus was checked by all three sensitivity test methods (disc, agar well, tube dilution) by the control laboratory and, although all these showed it to be resistant *in vitro*, there was a reduction of fever and an over-all clinical improvement. This was the only case where a major discrepancy occurred between the control laboratory and hospital of origin which reported the organism sensitive. The dose of penicillin was 600,000 units daily and 4,200,000 units total. Case 5 infected with a resistant organism showed some reduction in exudate and some temporary clinical improvement but then relapsed. Satisfactory response was then obtained with chloramphenicol, to which the organism was sensitive.

In the moderately resistant group, 8 cases were treated; 2 showed complete response, 3 a partial response and 3 no response. Case 10 was given 600,000 units of penicillin daily for five days, with excellent response; Case 17, a palmar infection, also responded well. Case 11 showed some reduction of fever and clinical improvement; treatment was then changed to chlortetracycline and a rapid response obtained. In Case 12 there was some reduction of fever after five days of treatment but otherwise a poor response. Case 13 (fracture sinus) was given 1,200,000 units daily for three days with no improvement whatsoever. Case 14 was given 900,000 units daily for 3½ days with only E and

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TABLE III.

PENICILLIN TREATED CASES

	Cases	Pathogen	Sensitivity		Dose/day (in units)	Days	Results
1.	Infected stump	*Staph. pyogenes*	R		300,000	6	Nil
2.	Abscess buttocks	*Staph. pyogenes*	R		400,000	13	Nil
3.	Infected scrotum	*Staph. pyogenes*	R	MR	600,000	5	Nil
4.	Furunculosis	*Staph. pyogenes*	R	(S)	600,000	7	F.C.
5.	Nose furuncle	*Staph. pyogenes*		(R)	600,000	7	E.C.
6.	Head cellulitis	*Staph. pyogenes*		(R)	600,000	5½	Nil
7.	Finger furunculosis	*Staph. pyogenes*		(R)	300,000	21	Nil
8.	Neck furunculosis	*Staph. pyogenes*		(R)	600,000	6	Nil
9.	Infection skin	*Staph. pyogenes*	R		600,000	—	Nil
10.	Throat infection	*Staph. pyogenes*		(MR)	600,000	5	F.E.B.C.
11.	Buttock furuncle	*Staph. pyogenes*	MR^r	(MR)	300,000	—	F.C.
12.	Infected finger	*Staph. pyogenes*		(MR)	600,000	5½	F.
13.	Fracture sinus	*Staph. pyogenes*		(MR)	1,200,000	3	Nil
14.	Infected foot	*Staph. pyogenes*		(MR)	900,000	3½	E.C.
15.	Infected hæmatoma	*Staph. pyogenes*		(MR)	600,000	10	Nil
16.	Infected bursa	*Staph. pyogenes*		(MR)	1,000,000	2½	Nil
17.	Palmar infection	*Staph. pyogenes*	MR		—	—	F.E.B.C.
18.	Hand cellulitis	*Staph. pyogenes*	S		300,000	3	F.E.B.C.
19.	Pneumonia	*Staph. pyogenes*	S		600,000	13	F.E.B.C.
20.	Infected stump	*Staph. pyogenes*		(S)	300,000	5	F.E.B.C.
21.	Ear, furuncle	*Staph. pyogenes*		(S)	600,000	5	F.E.B.C.
22.	Infected leg ulcer	*Staph. pyogenes*		(S)	600,000	—	F.E.B.C.
23.	Infected cyst	*Staph. pyogenes*		(S)	400,000	7	F.E.B.C.
24.	Furunculosis	*Staph. pyogenes*		(S)	1,200,000	5	F.E.B.C.
25.	Osteomyelitis	*Staph. pyogenes*	S		600,000	5	F.E.C.
26.	Infected stump	*Staph. pyogenes*	S		300,000	—	F.E.B.C.
27.	Infected wound	*Staph. pyogenes*	S		—	—	F.E.B.C.
28.	Infected ulcer	*Staph. pyogenes*	S		—	—	F.E.B.C.
29.	Subacute bact. endocarditis	Non-hæmolytic streptococcus	S		2,400,000	—	F.B.C.
30.	Bronchopneumonia	Pneumococcus	S		600,000	6	F.E.B.C.
31.	Infected knee	*Staph. pyogenes*	S		400,000	—	F.E.B.C.
32.	Abscess, axilla	*Staph. pyogenes*	S		300,000	4	F.E.B.C.
33.	Abscess, axilla	*Staph. pyogenes*	S		300,000	13	F.E.B.C.
34.	Infected incision	*Staph. pyogenes*	S		500,000	2	F.E.B.C.
35.	Face, cellulitis	*Staph. pyogenes*	S		600,000	6	F.E.B.C.
36.	Abscess, inguinal	*Staph. pyogenes*	S		300,000	5	F.E.B.C.
37.	Infected toe	*Staph. pyogenes*	S^r		300,000	7	F.E.B.C.
38.	Abscess, knee	*Staph. pyogenes*	S		400,000	23	F.E.B.C.
39.	Incisional abscess	*Staph. pyogenes*	S		400,000	8	F.E.B.C.
40.	Pneumonia	Pneumococcus (iii)		(S)	600,000	4½	F.B.C.
41.	Pneumonia	Pneumococcus		(S)	600,000	15	F.B.C.
42.	Pneumonia	Hæmolytic streptococcus		(S)	300,000	12	E.B.C.
43.	Finger, furuncle	*Staph. pyogenes*		(S)	600,000	6½	E.C.
44.	Graft osteomyelitis	*Staph. pyogenes*		(S)	300,000	19	E.B.C.
45.	Abscess, hand	*Staph. pyogenes*		(S)	600,000	6½	E.B.C.
46.	Abscess, finger	*Staph. pyogenes*		(S)	600,000	7	E.B.C.
47.	Incision, infection	*Staph. pyogenes*		(S)	1,500,000	14	E.C.
48.	Suppuration leg	*Staph. pyogenes*	S		600,000	3	F.E.B.C.
49.	Carbuncle	*Staph. pyogenes*		(S)	600,000	8	B.E.

S — Sensitive
S^r — Sensitive with colonies growing within the zone of inhibition
MR — Moderately resistant
MR^r — Moderately resistant with colonies growing within the zone of inhibition
R — Resistant

C response. Case 15 was given the usual dose of penicillin and also 1 g. of streptomycin daily for 10 days with no response. The anticipated synergism here was disappointing as the organism was sensitive to streptomycin. In Case 16 there was no response to 1,000,000 units daily for 2½ days.

In the sensitive group, 21 of the 32 cases showed complete F.E.B.C. response and 11 a partial response, but as in 8 of these (Cases 29, 40, 41, 42, 44, 45, 46 and 49) the pathogen was suppressed (B), they are considered therapeutic successes as well as the above, even though the attending physician failed to report on the fever

or clinical improvement. In the remaining 3, Case 25 was of osteomyelitis; Case 43 was of a furuncle of the finger and gave only an E.C. response on 600,000 units of penicillin daily for 6½ days; and the last one, No. 47, an incision infection, gave an E.C. response on 1,500,000 units for 14 days, the penicillin being given orally.

TABLE IV.

	Cases	*Pathogen*	*Sensitivity*		*Dose/day*	*Days*	*Results*
	CHLORTETRACYCLINE TREATED CASES						
					(grams)		
1.	Furunculosis	*Staph. pyogenes*	R		1.0	—	Nil
2.	Pyelitis	*E. coli*	R		1.0	6	C
3.	Infection face	*Staph. pyogenes*	R		1.0	4	Nil
4.	Ulcer ankle	*Staph. pyogenes*		(MR^r)	1.5	—	F.E.B.C.
5.	Cystitis	*E. coli*	MR^r		2.0	4	Nil
6.	Otitis	*E. coli*	MR^r		1.0	8	F.C.
7.	Infected incision	*Staph. pyogenes*	MR		1.0	4	F.E.B.C.
8.	Cystitis	*Proteus vulgaris*		(MR)	1.0	5	F.E.B.C.
9.	Pyuria	*E. coli*		(S)	2.0	5	F.E.B.C.
10.	Carbuncle	*Staph. pyogenes*	S		1.5	5	F.E.B.C.
11.	Abscess perineum	*E. coli*	S		1.5	5	F.E.B.C.
12.	Infected hand	*Staph. pyogenes*	S		1.0	—	Nil
13.	Infected ulcer	*S. fæcalis*		(S)	1.0	—	F.E.B.C.
14.	Infected stump	*Staph. pyogenes*		(S)	1.0	—	F.E.B.C.
15.	Boil neck	*Staph. pyogenes*	S		1.0	—	F.E.B.C.
16.	Otitis media	*Staph. pyogenes*	S		2.0	7	F.E.B.C.
17.	Bronchiectasis	*Staph. pyogenes*	S		1.0	8	F.E.B.C.
18.	Carbuncle, neck	*Staph. pyogenes*	S		1.5	5	F.E.B.C.
19.	Furunculosis	*Staph. pyogenes*		(S)	1.0	5	F.E.B.C.
20.	Pneumonia	Pneumococcus		(S)	1.0	6	F.E.B.C.
21.	Sinus tibia	*Staph. pyogenes*	S		1.0	7	F.E.B.C.
22.	Pyuria	*Staph. pyogenes*	S	(MR)	1.0	4	F.E.B.C.
	OXYTETRACYCLINE TREATED CASES						
1.	Cystitis	*A. ærogenes*	R		1.0	4	Nil
2.	Furunculosis	*Staph. pyogenes*	R	(MR)	1.0	11¼	E.C.
3.	Pneumonia	Friedländer's bacillus	MR		1.0	8	F.E.B.C.
4.	Infected burns	*Pseudomonas*		(MR)	1.0	5	F.E.B.C.
5.	Fracture sinus	*Staph. pyogenes*	MR	(S)	1.0	17	B.E.
6.	Pneumonia	*H. influenzæ*		(S)	1.0	5	F.E.B.C.
7.	Infected burns	*Staph. pyogenes*	S		1.0	5	F.E.B.C.

CHLORTETRACYCLINE TREATED CASES (TABLE IV)

In the chlortetracycline series there are 22 cases; 3 of the organisms were resistant, 5 moderately resistant and 14 sensitive. The 3 cases with resistant organisms showed little or no response to therapy. Of the 5 with moderately resistant organisms, 3 showed complete response, 1 partial response and 1 no response whatsoever. The dosage does not seem to be the controlling factor in these cases. Of the 14 sensitive cases, all but one gave a complete response. This latter case was reported as sensitive by both the hospital laboratory and the control laboratory.

OXYTETRACYCLINE TREATED CASES (TABLE IV)

There were only 7 cases in the oxytetracycline group; 2 organisms were reported resistant, 3 moderately resistant and 2 sensitive. One case with a resistant organism showed no response and one a partial response. In the moderately resistant group, Cases 3 and 4 showed complete response and the organism was suppressed in Case 5. The two cases with sensitive organisms showed complete F.E.B.C. response.

CHLORAMPHENICOL TREATED CASES (TABLE V)

In the chloramphenicol series there are 7 cases with moderately resistant and 22 with

TABLE V.

CHLORAMPHENICOL TREATED CASES

	Cases	Pathogen	Sensitivity	Dose/day	Days	Results
				(grams)		
1.	Cystitis	*Proteus*	MR	0.8	—	F.C.
2.	Pyuria	*Proteus*	MR	1.0	5	F.E.B.C.
3.	Abscess buttock	*Staph. pyogenes*	MR	1.0	11	Nil
4.	Leg infection	*Staph. pyogenes*	MR	1.0	—	F.C.
5.	Arthritis (pus)	*Staph. pyogenes*	MR	—	—	Nil
6.	Pneumonia	*Staph. pyogenes*	MR	1.0	4	Died
7.	Abscess buttock	*Staph. pyogenes*	MR	1.0	19	Nil
8.	Bronchiectasis	*Friedländer's & H. influenzæ*	S	1.0	8	F.E.B.C.
9.	Fracture, sinus	*Staph. pyogenes*	S	1.0	5	F.E.B.C.
10.	Osteomyelitis	*Staph. pyogenes*	S	1.0	—	F.B.C.
11.	Pyuria	*Aerobacter & Proteus*	S	1.0	10	F.B.C.
12.	Pyuria	Paracolon	(S)	4.0	7	F.E.B.C.
13.	Pyuria	*E. coli*	(S)	2.0	5½	F.E.B.C.
14.	Incision infected	*Proteus & E. coli*	(S)	1.5	6½	F.E.B.C.
15.	Cystitis	*E. coli*	S	1.0	9½	F.E.B.C.
16.	Pyuria	*Aerobacter*	(S)	1.0	6½	F.E.B.C.
17.	Infected incision	*Staph. pyogenes*	Sr	.75	5	F.E.B.C.
18.	Infected incision	*Staph. pyogenes*	Sr	1.0	9	Nil
19.	Pyelitis	*Staph. pyogenes*	S	1.0	4	Nil
20.	Abscess, knee	*Staph. pyogenes*	(S)	1.5	—	F.E.B.C.
21.	Infected incision	*Staph. pyogenes*	S	1.0	3	F.E.B.C.
22.	Osteomyelitis	*Staph. pyogenes*	S	1.0	76	Nil
23.	Osteomyelitis	*Staph. pyogenes*	S	1.0	21	F.E.B.C.
24.	Osteomyelitis	*Staph. pyogenes*	S	—	—	F.E.B.C.
25.	Incision infection	*Staph. pyogenes*	S	1.0	7	F.E.C.
26.	Incision infection	*Staph. pyogenes*	S	1.0	14	F.E.B.C.
27.	Osteomyelitis	*Staph. pyogenes*	S	1.0	20	F.E.B.C.
28.	Furuncles	*Staph. pyogenes*	S	1.0	13	F.E.B.C.
29.	Furunculosis	*Staph. pyogenes*	Sr	1.0	8	F.E.C.

ERYTHROMYCIN TREATED CASES

1.	Septicæmia	*Staph. pyogenes*	R	2.0 g. x 1 & 1.2 g.	6	F.
2.	Bronchopneumonia	*Staph. pyogenes*	R	0.8 g.	13	F.C.
3.	Gluteal abscess	*Staph. pyogenes*	S	0.8 g.	6	F.E.B.C.
4.	Infected incision	*Staph. pyogenes*	(S)	1.2 g. x 2 & 0.8 g.	6	F.E.B.C.
5.	Sinus femur	*Staph. pyogenes*	S	0.8 g.	20	F.C.
6.	Furunculosis	*Staph. pyogenes*	Sr	1.2 g.	—	F.E.B.C.
7.	Furunculosis	*Staph. pyogenes*	S	0.6 g.	8	F.E.B.C.
8.	Furunculosis	*Staph. pyogenes*	S	1.2 g.	11	F.E.B.C.
9.	Furunculosis	*Staph. pyogenes*	S	1.2 g.	20	F.E.B.C.
10.	Thumb, cellulitis	*Staph. pyogenes*	MR (S)	1.0 g.	35	E.C.B.
11.	Pneumonia	*Staph. pyogenes*	(S)	2.1 g.	25	C.F.B.

sensitive organisms. In the moderately resistant group, the correlation is variable with 1 complete response, 2 partial responses and 4 absent responses. In the 22 sensitive cases 3 showed no response whatsoever. These were Cases 18, 19 and 22. Case 18 was a postgastrectomy incisional staphylococcal infection which was reported by the control laboratory as sensitive with colonies in the zone of inhibition. The organism in Case 19, of pyelitis, was reported as sensitive in both laboratories and, after four days' treatment, the case showed no response. Case 22 was a bilateral fracture of the tibia with sliding bone grafts and an osteomyelitis with three draining sinuses which showed only an initial response. Partial response occurred in 4 cases (10, 11, 25, 29) and the remaining 15 responded completely.

ERYTHROMYCIN TREATED CASES (TABLE V)

In the erythromycin series there are 11 cases, 2 with resistant and 9 with sensitive organisms. Case 1 in the resistant group was a patient with rheumatoid arthritis who developed a secondary staphylococcal infection in an athlete's-foot lesion, with a subsequent staphylococcal septicæmia. Two grams of erythromycin were given in the first 24 hours, then 1.2 g. daily subse-

quently. There was some reduction of fever in the first week but the skin lesion remained active with exudation, bacteria and a poor clinical response. Case 2, a bronchopneumonia, cleared but the clinician reported F.C. response. Of the 9 sensitive cases, 6 showed a complete response and 3 a partial response but as in two of these, Cases 10 and 11, the pathogen was suppressed (B), they are considered therapeutic successes as well. The remaining one, Case 5, was a chronic osteomyelitis of the right femur with a draining sinus. There was some reduction in fever and clinical improvement but drainage with the presence of pathogens continued in spite of treatment for 20 days.

DISCUSSION

We have previously stated that if one desires to achieve a degree of correlation between the results of the *in vitro* sensitivity tests and the clinical response to therapy, the first essential is for the laboratory to standardize *in vitro* tests so that the results are reproducible. Furthermore if more than one kind of *in vitro* sensitivity test is used, each should bear a known relationship to the others. Some success in this problem has been achieved in our laboratories. The second essential is to match the laboratory results with the therapeutic, with special attention to the "resistant" groups of pathogenic bacteria.

For this purpose the results of therapy were tabulated against the *in vitro sensitivity* of the organism. The zones of *in vitro* resistance used agree with the clinical response in a high percentage of cases. We thus propose to call this the clinically non-responsive zone (to attempt to get away from the term resistant, which has no accurate definition). Organisms sensitive to concentrations below this may respond to therapy. Those sensitive only to the higher levels of this responsive zone are considered moderately resistant, and may require a larger dose of antibiotic for more cures to be obtained. In the truly sensitive zone where the organisms are sensitive to the lower concentrations, the majority of pathogens are eradicated by ordinary dosage. Gould and Bowie[17] state that the finding of colonies within the zone of inhibition in the sensitivity tests "weighs heavily against the use of that particular antibiotic". Our analysis of the possible significance of such colonies affecting therapy is only apparent in cases treated with chloramphenicol and not with penicillin. The findings to date with the other antibiotics are equivocal.

This definition of a clinically non-responsive (resistant) zone seems to us to be a radical departure from what is attempted in most laboratories where the emphasis is on establishing a sensitive zone in which excellent clinical results are obtained. All other organisms outside this group are mistakenly called resistant. We have also attempted to show from the literature that a zone separating sensitive from resistant varies greatly in different centres due to concentrations used being at a higher or lower level and that therefore no two laboratories are using the terms sensitive and resistant to mean the same thing.

This accounts for most reports of consistently good results of therapy where the laboratory considers the organism resistant. In our opinion the level set by this particular laboratory may be too low if the clinician is going to interpret all the organisms not inhibited by this arbitrary level as being entirely resistant to therapy. We, ourselves, have been able to salvage a few cases where organisms of multiple resistance were successfully treated by the antibiotic we found in the moderately resistant zone.

It is our opinion that *in vitro* sensitivity tests are in much the same condition of lack of uniformity as were the serological tests for syphilis some years ago when every laboratory had modified a standard test to suit its particular requirements. There is thus no one standard in relation to therapy, or for comparing of results of the percentage of resistant strains from different parts of the country. This is possible only if similar techniques are used for performing the *in vitro* sensitivity tests. Any one centre may have a technique and method of reporting which satisfies both the laboratory and the clinician locally, but the local method may bear no relationship to the method of reporting of other centres.

The time is approaching in this era of standards when we should be willing to sink our personal biases and to submit to the advice of those well-established centres which have tests of proven value worked out but have not yet presented the evidence in such a manner as to allow the results to be critically examined by the sceptically minded. Such a step we are trying to foster in the Department of Veterans Affairs hospitals in Canada; this is the kind of control that is being exercised in Sweden by the State

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Bacteriological Laboratory (Tunevall and Ericsson). If this could be achieved, one would then be able to compare directly the percentage of resistant staphylococci in different centres instead of having, as at present, to decipher from the published data—if they are given—just what is the writer's definition of resistance. Difficult as it is to achieve a uniformity in the tests between various laboratories, it is still more difficult to assess the value of therapy in a series of cases such as those used in this paper. However, we have tried to discard any that were obviously unsuitable from several hundred submitted and, on the basis of the cases selected, we think that a beginning has been made in setting up a zone which we call non-responsive. An infection due to an organism in this category is very unlikely to be cured by using this antibiotic therapeutically. In no instance has 100% correlation been achieved or expected, for the reasons outlined in the introduction. One should also bear in mind known specialized conditions in certain diseases, e.g. endocarditis, and not apply the ordinary rules too literally. Whether urinary infections should receive a special set of levels, as used in some laboratories, is open to discussion since the infection may be in the deep tissue as well as in the superficial and not be reached by the high urinary concentrations. Also certain bacteria, such as *Proteus vulgaris*, are notoriously difficult to deal with, and finally some antibiotics do not appear to act as well against certain organisms as other species of like *in vitro* sensitivity, e.g. streptomycin against staphylococci.

It is felt by the authors that an organized attempt should be made in the near future in Canada to obtain some measure of agreement on the laboratory testing and reporting, by convening a meeting of representatives from larger hospitals, universities and public health laboratories.

SUMMARY

1. Cases of human infection have been studied, and the clinical response to therapy with a particular antibiotic has been correlated with results of *in vitro sensitivity* tests.

2. Particular emphasis has been placed on defining a zone of *in vitro* resistance corresponding to non-response to therapy (resistant bacteria).

3. Infections with organisms in the sensitive zone nearly always respond to therapy; those in the moderately resistant group may be treated with higher dosage.

4. The urgent need for agreement between laboratories in respect to standard reporting of results has been discussed and the need for correlating laboratory results with effects of therapy has been emphasized.

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RÉSUMÉ

Les auteurs ont cherché à résoudre les problèmes que pose le manque de corrélation entre la sensibilité d'un certain micro-organisme à tel antibiotique in vitro et celle qui existe in vivo.. Malgré les multiples facteurs qui peuvent entraîner une dissociation dans les résultats, il est un grand nombre de cas où cette corrélation est bien positive. La série présentée dans cet article est basée sur l'observation de 118 cas; cette étude comporte des données sur la pénicilline, le chloramphénicol, le chlortétracycline, l'érythromycine et l'oxytétracycline. Les critères employés dans l'interprétation furent: l'abaissement de la fièvre; la diminution de l'exudat; la réduction du nombre, voire même la disparition, des bactéries; et l'amélioration clinique en général.

Dans la majorité des cas, les résultats de laboratoire coincident avec ceux de la clinique. Les infections causées par des micro-organismes de la zone dite "sensible" répondent presque toujours au traitement. Lorsque la sensibilité du microbe apparaît au delà de la concentration d'antibiotique communément employée, les auteurs ont établi la zone dite "cliniquement inerte" afin d'éviter le terme "résistant" dont l'emploi ici est inexact. Plusieurs tableaux permettent de voir la sensibilité des pathogènes dans les cas rapportés, la thérapeutique employée, les résultats obtenus, ainsi que les méthodes et les standards de différents laboratoires de bactériologie. Dans l'état présent de la question, un manque d'uniformité tant dans les épreuves de sensibilité que dans l'interprétation de celles-ci rend impossible la comparaison des résultats obtenus dans les différents centres bactériologiques. Le Département des Affaires des Vétérans du Canada cherche à établir des normes dans ce sens pour ses hôpitaux, comparables à celles mises en pratique par la Laboratoire bactériologique d'état de Suède. M.R.D.

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ON MENTAL HEALTH*

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THE EXPERT COMMITTEE on mental health of the World Health Organization has defined mental health as the "*capacity* to establish harmonious inter-personal *relationships*." Let us try to analyze this definition in order to clarify in detail its real scope. This definition includes two fundamental and different factors. In the first place, there is the word *capacity*, a concept which refers to the individual. In the second place the word *relationship* deals with the environment or the milieu in which the individual grows and lives.

In its widest sense, this definition does not differ from the concept of physical health, if we define the latter as the condition of physiological balance of an organism, as the result of its capacity to establish an adequate (harmonious) interchange with the environment in which it develops. Mental health, as above defined, is based consequently on strict biological principles.

A condition of harmony between organism and environment can only be said to exist when, on the one hand, the latter contains and provides the organism all that it requires for its physiological balance, and when, on the other hand, the organism is capable of making use of it. For example, under perfect anatomophysiological conditions, an organism cannot carry out the adequate interchange involved in the function of respiration if the milieu in which it lives does not contain the needed concentration of oxygen. On the other hand, a subject suffering from asthma, let us say, cannot utilize efficiently all the oxygen that the environment puts at his disposal.

How does this interchange express itself in the field of human life, as between the individual and the social environment in which he lives, and what are the factors that determine this relationship?

Man has been forced to live in society—that is, in articulate and integrated groups—because otherwise he would have perished. United, man can obtain individual satisfactions which by himself alone he would never have been able to do. Associated in organized groups he has succeeded in mastering his environment and, in the course of civilization, he has been able even to modify, to his own benefit, circumstances or environmental factors which were originally adverse to him. In order to achieve such results, man has been forced to impose upon himself a series of restrictions and prohibitions on his most dear but primitive, instinctual tendencies. These tendencies, however, have not been completely eliminated from human life. They have been repressed, and though in a latent form they exist still with all their intensity in every one of us, they are expressed in more or less unconscious fantasies of omnipotence, and they try to satisfy themselves at every moment of our lives in a more or less subtle or violent fashion. But, if the individual is to live harmoniously in society, in spite of all the renunciations of narcissistic character that this involves—if, in other words, he is to be capable of establishing harmonious interpersonal relationships—it is absolutely necessary that he experience a certain degree of satisfaction which compensates for the sacrifice, however partial, of his narcissism. This subjective experience of satisfaction or well-being seems to have been ignored in the definition of the Committee. But this apparent omission disappears when we realize that it is implied in the word "harmonious" which describes the interpersonal relationship a mentally healthy individual is capable of establishing with his environment. Indeed, harmonious relationships are only possible when they produce a feeling of well-being, of satisfaction between the two parts that interact in a relationship.

However, a clarification of what we mean by the word "satisfaction" seems absolutely necessary. By that we do not mean exclusively "pleasure" in its strict sense, though this is not and cannot be excluded. With the word "satisfaction" we want to express the emotional condition which the person perceives within himself, as a result of having found a harmonious and well-balanced solution to his own instinctual impulses originally felt as potentially in conflict. However, in order to achieve such a condition, the individual has to accept the so-called reality principle which imposes inevitable limitations upon him. Only when the individual has accepted this principle can it be said that he enjoys

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*Address delivered at the opening of the Pan-American Seminar on Mental Hygiene and Child Psychiatry, Montevideo, Uruguay, July 21, 1955.

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real mental health. Accepting this principle will force him on some occasions, perhaps on many, to renounce immediate gratification, felt at times with great intensity and urgency, but on the other hand, he will feel in possession of a security and mastery which will make it possible for him to govern his life and his behaviour by his rational and logical thinking: in other words, he will be able to use his common sense. Nevertheless, accepting the reality does not mean a total renunciation of the gratification of pleasure, but rather its postponement. To begin with, it means accepting the limitations of human nature in general, and of the individual in particular, as well as the conditions of the physical and social environment in which he lives. Accepting reality is difficult, however, for those individuals who find it hard, and/or painful, to renounce the fantasies of omnipotence, characteristic of the magic way of thinking of the child or the primitive; these fantasies are, after all, only the expression of an unbearable feeling of weakness and dependency on instinctual tendencies.

Accepting reality implies also the capacity to delay, to postpone gratification, and to tolerate tension. It implies the use of this delay to find out, with the help of our judgment and reasoning —that is, with common sense—the best and most adequate way of gratifying our wishes and instinctual tendencies; and this must be done without bringing ourselves into conflict with our spiritual, ethical, æsthetic and religious values, or with the values, mores, traditions, etc., of the social environment in which we live. Unfortunately, we see, only too often, individuals endowed with a very brilliant intelligence, with an I.Q. much above normal, who, precisely because they are not capable of accepting the reality of their own nature and the world in which they live, lead a life full of misery, anxiety and failure. This condition of dissatisfaction prevents them from establishing harmonious relationships with their neighbours, and consequently they are forced to live in a destructive emotional isolation. We want to emphasize this point because mental health does not imply *necessarily* a very high intellectual capacity, though as a matter of fact it does not exclude it. However, it is well known that the genius lives isolated, and rarely feels happy in his interpersonal relationships. We firmly believe that it is important to insist on this point because one sees too frequently, in certain circles, an excessive emphasis given to intelligence. Many educators, for example, show more or less consciously certain compassion or disdain for the student of average or slightly low I.Q. It is necessary to insist that intelligence is only a tool at the service of the personality, which, in the final analysis, alone determines whether intelligence is utilized adequately. This is only possible if the individual possesses a certain amount of *emotional* stability, without which no correct use can be made of reason and judgment. Without exaggeration, it can be said that more important than having a high I.Q. is learning how it can be utilized. Mental health is not necessarily identical with happiness, and mental health workers do not imagine that they are going to make mankind happy; it is obvious, though, that the mentally healthy individual feels happier than the one who is not. *The emotionally balanced individual is able to stand his own unhappiness and misery, and that of his neighbour,* without sentimental resignation, passive sorrow or violent despair, which only indicates the weakness or the collapse of the synthetic functions of his ego.

In the field of interpersonal relationships, mental health implies specifically the capacity for genital heterosexual satisfaction, as well as the capacity to tolerate libidinal privations and frustrations without regressive tendencies and without anxiety. It also means the possession of a high threshold of invulnerability and tolerance for the aggressiveness of other individuals without submission but, on the contrary, with the capacity to assert oneself when it is necessary. This capacity for self-assertiveness demands, necessarily, a certain tolerance for the individual's own aggressive impulses, and the capacity of accepting them without feelings of guilt. These aggressive impulses, however, cannot threaten, in the healthy person, the loss of the love object. In other words, they should not interfere negatively in a serious way in harmonious interpersonal relationships.

The individual who is mentally healthy should also possess the capacity to work and enjoy his work, as well as be able to enjoy leisure without feeling compulsion to keep busy. The mentally healthy individual enjoys his work, he finds great satisfaction in his creative activity as well as in the mastering and control of his muscles, his thoughts, or both. When work is not a source of satisfaction, but is felt to be a duty or a burden which has to be accepted with more

or less resignation or protest, or that has to be evaded by all possible ways or rationalization, it is an indication of an obvious emotional imbalance.

Unfortunately, in our contemporary occidental societies, work is carried out, very frequently, rather as a compulsion than as a spontaneous activity which produces satisfaction. Work is done as an end rather than as a means; it is regarded by many as a remedy against their own anxieties. On the other hand, we very frequently see people around us who are incapable of enjoying the leisure of the week-end or holidays. In order to feel free of anxiety they have to force themselves to an exaggerated physical activity which brings them back to their occupations more tired than they felt when they started a week-end or vacation. Or they are forced to submerge themselves in an excess of gratification of their more or less modified and socially acceptable infantile or primitive instinctual tendencies.

Through his work, man achieves the great satisfaction of influencing and modifying his environment, adapting it to a greater or lesser degree to his basic needs first, and his wishes or aspirations afterwards. It was precisely this need to adapt and modify the environment for the gratification of his most legitimate instinctual needs, as for instance self-preservation, which forced man to associate himself in greater groups than those limited to his own family. But, as we have already stated, this forced him also to renounce by repression his fantasies of omnipotence, and to regulate and restrict other impulses, such as his aggressiveness and sexuality. It is precisely in creative work that man is able to find a certain constructive gratification necessary for human nature, overwhelmed as he is by his infantile but powerful megalomanic fantasies.

When, as so frequently happens in our culture, he does not or cannot find in his work any immediate creative result (as for instance in the monotonous routine of the modern techniques of mass production in an assembly line), the individual feels deprived of one of his most necessary satisfactions, and consequently of one of the most efficient stimuli for his activity. This lack of gratification produces a feeling of frustration, and, as a result, it stimulates a return to more or less repressed aggressive tendencies, which make it difficult or impossible for the individual to establish harmonious interpersonal relationships. The capacity for sublimation of the individual, which is one of the most efficient and desirable mechanisms of defence of the human mind against his most primitive tendencies, determines to a large extent the possibilities of his reaching a reasonable degree of mental health. Creative working, because it implies skilful and controlled muscular activity, helps to sublimate aggressive tendencies. On the other hand, the creative part of work offers the individual the possibility of gratifying his fantasies of power and omnipotence. But, neither one nor the other can be achieved satisfactorily from the point of view of mental health if the individual does not possess a certain capacity for genital heterosexual satisfaction as well as a certain tolerance for its frustrations. This capacity of relation with the libidinal object is already initiated during the first months of our lives between the infant and the mother.

The birth represents a brutal and dramatic disruption of the most perfect functional harmony conceivable between one organism, the fetus, and its mother, the environment. During the months of gestation, mother and child live in a complete and perfect functional (symbiotic) unit. This leaves in the organism of the newborn a biological constitutional trace, promptly perceived by the self as a longing for reunion, which later on will be expressed by the tendency, common to every human being, towards the establishment of the harmonious relationship with his physical and social environment. This is a behavioural and tolerable expression of a hidden megalomanic fantasy to return to the original physiological harmony broken at the act of birth. The child has to learn to adapt himself, painfully to face the reality of the separation from the mother, and to live independently from her. This process is long and painful, implies renunciations and frustrations, and can only be achieved satisfactorily in a rather slow manner, provided that the child feels supported, encouraged, rewarded and protected in his development by the warm love of a vigilant and anxiety-free mother at first, and of both mother and father afterwards. This attitude of the parents leaves in the mind of the child a feeling of security which is the real foundation of psychic health.

It is in this firm and harmonious relationship between the child and his parents that he will

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acquire the capacity to relate with an object, which will make him feel loved, and will make it possible for him, later on, to develop his capacity to love and accept frustrations in love, without too much anxiety. If the early relationship between the child and his parents does not develop on the basis of a certain degree of mutual satisfaction and harmony, the child will grow emotionally defective and/or unstable; and he will encounter, in adolescence first and adult life later, sometimes insurmountable difficulties in establishing satisfactory relationships, the final result of which will be to make him feel rejected by his environment. But if he grows under conditions of love, protection and understanding, he will develop a feeling of security and belonging; this will make it not only desirable but highly gratifying to have emotional interchange with his fellow beings, whom he will consider and respect as persons, and not only as deliverers of goods for his narcissistic needs.

From all this it follows that, from an etiological point of view, the basic principle of all organized activity to promote mental health should be to encourage every possibility of offering the child the most favourable environment from gestation on; this should be done by protecting and providing for the mother's *physical* and *mental* welfare.

The concept of mental health as defined by the experts of the World Health Organization brings two important factors into play, as has been already stated: individual and environmental. This concept automatically widens the scope of all kinds of organized activity, with a view to promoting and preserving mental health, from the narrow field of individual hygiene or of the clinic or the hospital.

The recognition of the etiological importance of the social environment for the mental health of the individual, and the consequent necessity of influencing or modifying certain social or physical characteristics which are considered dangerous or even pathogenic—this is the new concept which has originated a new branch of psychiatric science, the so-called social psychiatry or the science of human relations.

From these a new division of mental hygiene has developed, the hygiene of human relations. Evidently, the method which had to be followed for the promotion and preservation of mental health had to be based on this duality; on the one hand, organized social activity directed to the community; and on the other, private activity of the individual. The methods of action adopted should be divided into two large groups: short-term and long-term methods. Though both are based on etiological knowledge, it seems necessary to separate the short-term methods that deal with immediate problems, and are used particularly in a curative or therapeutic direction, from the long-term methods, which have to work along the lines of preventive medicine.

This implies that while the first method obviously requires the direct intervention of the clinical psychiatrist, in the long-term method he assumes a somewhat secondary role in favour of the social activity of the hygienist and public health workers in general, who need not necessarily be clinical psychiatrists.

However, in the long-term method, the psychiatrist has one most essential role, and this is *research on etiological factors*, without which the work of the clinician or the hygienist would hardly be possible. It seems, however, quite in order to state that if one does not find more emphasis on mental hygiene among public health workers in general, and government agencies on which they depend, this is due, partially at least, to the exaggerated idea that a *complete* etiological knowledge is absolutely necessary for all types of preventive action. We believe that we have to combat this attitude, even if it is strictly correct theoretically and scientifically. The realities, not only in the field of general public health, but also in that of mental health, and even in therapeutics, show that positive results can be obtained, and already have been obtained long before we had a detailed knowledge of etiology.

There is another point on which we believe it is important to insist, as Dr. Hargreaves did in his address to the meeting in Toronto last year —psychiatrists interested in mental health have an important mission. This consists in convincing the authorities and agencies responsible for public welfare of one thing: despite widespread prejudices, etiological knowledge so far achieved in mental medicine allows us to affirm without any doubt that a considerable number of firm basic principles already exists upon which an efficient organized activity to promote and preserve mental health can be established.

Perhaps the very important results we can expect will depend on how much we can con-

vince these public health workers from whom mental hygienists are at present too far removed. It may be that the responsibility for this situation belongs to both fields. The fact remains that a certain dichotomy exists between public health and mental health workers; this dichotomy is opposed to our modern concept of the human being, which can no longer accept the dualistic point of view that prevailed until not very long ago, and still persists in practice, between soma and psyche.

There is no doubt that our first duty as mental health officials is to persuade, so that our efforts may be united to those of public health workers in general, from whom we have much to learn. Their services and organizations, though with certain changes and expansions, will have to be utilized as the basis of organized activity, both short-term and long-term, in favour of mental health. The mental health worker has to be considered and treated on equal terms with public health workers, some of whose methods are the same. It is necessary too that the latter be introduced to the problems of mental health. They have to face the reality that almost half of all hospital beds in the Western world are occupied by psychiatric patients. If the magnitude of the problem, from a social point of view, is accepted, and if we succeed in convincing public health workers of the scientific truth that the etiological concepts which psychiatrists possess already are very valuable in preventive work, then there is no doubt that organized common activity can be achieved.

Among the short-term methods we include, of course, education. This should be directed toward enlightening people at large, including professional circles and the so-called ruling classes, about several important points of view, which are still, unfortunately, too deeply rooted in the minds of people and which represent large obstacles, not only for the preventive action of the hygienist but also for the therapeutic activity of practical psychiatrists. This educational campaign should be directed towards making people familiar with the new concepts of mental health, and with the progress achieved during the last 50 years in the field of clinical psychiatry, and in the treatment and prevention of mental illness. This task should aim at eliminating from the environment the stigma of shame which unfortunately still persists regarding the mentally ill. People also have to be convinced that the incurability of mental illness is no longer a rigid scientific axiom. This nihilistic attitude which still persists in many high circles has been, and is, partially responsible for the slow progress of scientific research in psychiatry.

One can hardly speak of incurability of mental illness today, when nearly 50% or even more of the patients admitted to well-organized mental hospitals are discharged within the first year of admission. Another of the great prejudices which must be dispelled is the one related to heredity of mental diseases, as expressed in popular thought: that children have to pay for the sins of their parents. Psychiatrists are now convinced that heredity does not play the important role in the etiology of mental illnesses that traditional medicine had thought and accepted for centuries. The very common fact that several members of the same family and even several generations show mental disorders does not mean necessarily that these disorders are transmitted. Contemporary medicine has discovered new etiological factors which tend to explain the appearance of familial diseases without their being necessarily inherited.

We would like to remind you of the concepts of "exposure" and "contact transmission". We now know that adaptation and conditioning lead children to imitate first and adopt later, as their own, tendencies and personality traits of those people to whom they have been exposed during their childhood: parents, siblings and others. It is also accepted now that the prenatal, natal and neonatal periods form a continuum; the child is exposed to a series of stresses of all kinds (toxicosis, infections, traumata and so on) which may result in cerebral damage, and which later on can express themselves in neuropsychiatric disorders such as mental deficiencies, severe behaviour problems and epilepsies, which until now were considered hereditary, whereas in fact they appear to be acquired and neither transmitted nor transmissible.

This and other new concepts have diminished to a considerable extent the exaggerated emphasis that traditional psychiatry had put on heredity. These concepts give the clinician new possibilities for a therapeutic approach, and the hygienist the means for preventive work, which should contribute towards dispelling from the minds of physicians and relatives the element of "fate", incurability or helplessness, which until recently prevailed in psychiatry. Another

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new concept introduced by modern psychiatry, and which it is most important to popularize, is the so-called "social cure". It is based on the recognition of the fact that "normality" is only an ideal which never can be achieved either in the field of physical or mental health. It implies that many people with slight mental or emotional abnormalities can function very actively and constructively, and consequently cannot be segregated, but should be accepted by society as an integral part. Many mental patients are discharged today from the hospital as "socially cured", and become efficient citizens, even if they carry some personality scar.

It would be unwise to harbour too many illusions. We have to recognize that, in spite of all the work done so far by psychiatrists and mental health workers, there is a considerable amount of scepticism and prejudice towards them all. The damage that such an attitude does to patients, and of course to society, is not generally known. It represents the main obstacle to an early diagnosis, which is the basis in psychiatry, as in any other branch of medicine, for the maximum therapeutic efficiency.

This educational campaign should not be carried out exclusively by psychiatrists, in the first place, because their activities have to be concentrated on solving the immediate problems of treatment and care of the patient, and also because they have to carry out scientific research, which is the basis for any therapy and hygiene. If anything, the educational work of the psychiatrist should be directed towards persuading the small minority of leaders to feel their responsibility for community welfare. Professionals of all kinds—educators, jurists, legislators, scientists and sociologists, business men, but above all public health workers—are the first who have to be informed of modern principles and methods of promoting and preserving mental health; on their attitude will depend whether modern scientific understanding of mental health can be utilized for the benefit of the community.

Mental health work should be integrated in the work of public health. Though specialization in mental health work is necessary, it is also essential that the public health worker should be informed of the concepts and the methods of preventive psychiatry. We are fully aware that this educational campaign has to face serious resistance of all kinds. However, the mental health official is well informed of the nature, source and dynamics of such resistance, and has to learn to deal with it just as the psychiatrist has to deal with the resistance of his patients in the therapeutic setting. The mental health worker cannot overlook the fact that this resistance has deeper roots than that encountered by the public health worker in the field of the transmissible diseases, which, as is known, is based mainly on routine traditions and ignorance of facts. This forces the mental health worker to become well acquainted with the unconscious motivation of human behaviour, both individual and collective. In that way he will not be discouraged in facing the difficulties and obstacles that he is going to find in his work. Understanding such motivation will not only make his work easier, but will also give him a much better understanding of ways and means of making his work efficient.

We believe that it is important to emphasize that in all educational work mental health officials should be very cautious, particularly when dealing with the public at large. They should be completely familiar with all available psychiatric resources in their community, otherwise they may cause justified disappointment among those people who might request psychiatric help in communities not yet sufficiently equipped in this field. We believe this is a very important point to stress, because we are completely aware that, with very few exceptions, there is no community which can offer all the facilities needed in terms of mental health. This is the reason why we insist that our campaign should be directed primarily or simultaneously toward the minorities responsible for the welfare of the community, and whose duty it is to create all the services and institutions now lacking, and to bring to maximum efficiency those already existing.

Let us mention some concrete examples. It is absolutely necessary for every community to possess enough beds for all psychiatric needs, so that every patient who needs hospitalization is not kept waiting for weeks, or even months, before treatment. Complete reorganization of all existing institutions for mental patients is also necessary; most of them need to be transformed into active centres for treatment and rehabilitation, instead of the almost exclusively institutional care given by most traditional mental hospitals.

We have to promote the creation of psychiatric services in every general hospital as an integral

part of the whole hospital setting, like the departments of medicine and surgery. The same services should operate in children's hospitals, women's hospitals and prenatal clinics. Mental health clinics should operate in schools and industries, or their services should be available. All these services should function with the leading thought that mental health is as important as physical health, and that consequently it is not enough to provide the individual with a diet rich in calories and vitamins. It is still believed in many circles, disregarding what we were told twenty centuries ago, that "man lives by bread alone". One wants to believe that security depends exclusively on the possession of material means. We know enough today to understand that what really counts for the human being is the feeling of being respected and accepted in a social environment. The only way in which man will be satisfied is to have the feeling of belonging, which is as necessary for him as the air he breathes. The child, the adult, and the aged in order to feel secure need, as much as the loaf of bread, the feeling and thought that without relinquishing their individuality they are an integral and active part of a social group, of a community which extends beyond house and family. If this feeling is missing, rejection and frustration come to the fore, and with them there is a return of the more aggressive impulses, which make it impossible to establish a harmonious interpersonal relationship. The feeling that one is not an integral part of the social group in which one lives has become, nowadays, a rather important contributing or precipitating factor in mental illness. Particularly during the last 40 years, as a result of the tremendous development in means of communication and transportation, and of political and social catastrophes of our times, an extraordinary migratory mobilization of the population has taken place which has become much more acute the last few years as a result of the Second World War. Individuals, families, and even whole populations have been displaced and uprooted from country, home, traditions and language, and have been forced to live in social and cultural environments completely different from their own, some of which are not well prepared to receive them in the way that they would wish. The adaptation and integration from both sides is a difficult and slow process, and during its course psychological casualties are produced on both sides.

We are completely aware that a lot of work has already been done to face this situation in some countries of this continent. Most countries however have been busy with what they felt were more urgent public health problems, disregarding this one of such high sociological significance. We have mentioned these problems only to give an idea of the extent and variety of the aspects that mental health workers have to face as a result of the new understanding of mental health uncovered by modern social psychiatry. As a matter of fact, there is no area of human endeavour in which the mental health worker should not operate. He has to try to inform the legislators of the new concepts in social psychiatry and mental health, so that they will collaborate in his preventive activity.

To give some examples taken at random: it is necessary to introduce certain changes in the Penal Code and in the regime of penitentiaries, prisons, and also orphanages. Certain aspects of divorce legislation must be modified. Co-operation of the legislature is essential concerning the situation of orphans and illegitimate children. New principles for adoption have to be formulated, based on our scientific knowledge of the destiny of children without parents. We know that all of them are potential or actual carriers of anti-social drives, which make them, because of their psychological influence, as dangerous for the community as carriers of infectious diseases.

Our organized activity also very strongly needs the constant co-operation of teachers, educators and ministers. We believe that it is absolutely essential that they all, including university professors, should realize the deep significance of this fundamental principle, that the main function of the educator lies as much, if not more, in helping the youngster's normal emotional development as in teaching him.

This point is of such paramount importance from the point of view of mental hygiene that it is deemed necessary for teachers and educators of all kinds to become thoroughly acquainted with all the factors that influence the normal growth and development of the individual, as well as all the numerous cultural and social factors which play an important role in the shaping of the total personality. Only through this knowledge and understanding of human nature will they become totally aware of the real and powerful influence that they have upon children and young people, and how they can contribute efficiently, not only in the field of intellectual endeavour, but also in the promotion of a high level of mental health in their countries.

INTERSTITIAL PLASMACELLULAR (PARASITIC) PNEUMONIA IN INFANTS*

(REPORT OF THREE CASES)

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DURING the last two decades European authors, following Ammich,[1] have isolated among the interstitial lesions involving the lungs of infants a specific clinical and anatomical entity which they describe as plasmacellular pneumonia. The disease occurs mainly in premature or hypotrophic infants, aged two to four months, the majority of whom have spent some time in hospital wards. It appears as a steadily progressive respiratory distress with cyanosis and slight or moderate coughing but with little or no fever. The x-ray films show important shadows but clinical examination usually reveals only a few crepitant rales and a slight impairment of resonance. The illness lasts usually between four and 13 days, but in some cases for as long as two to three weeks. Mortality rates vary from 15 to 90%, and over-all figures suggest that at least one half of the patients die.

On gross examination the lungs show a diffuse or patchy greyish homogeneous consolidation; microscopically there is dense interstitial infiltration with lymphocytes and mainly plasma cells, but no fibrosis. The alveolar spaces contain an abundant foamy, apparently serous substance. Vanêk[2] in 1951 studied this material and noted that it is formed of numerous agglomerated spherules containing minute basophilic granules. He thus identified a parasite called *Pneumocystis carinii.*

In Europe, the disease is considered rather common; most of the reported cases have been from Austria, Switzerland, Germany, Czechoslovakia and Italy, with a very few from Scandinavia[3-5] and a single case from England, published by Baar.[6] We have found one report in the French literature.[7] Only one case has been reported in the United States, by Lunseth *et al.*[8] Deamer and Zollinger[9] from San Francisco and Zürich have published a review on this subject, using material collected in Switzerland. It is noteworthy that the disease has not till now been mentioned in Canada.

The purpose of this paper is to describe three cases observed in Quebec City during the past two years.

OBSERVATIONS

CASE 1

Boy, born at term, birth weight 2,600 g. Born October 6, 1952; died April 10, 1953. When 3 months and 13 days old, he was brought to hospital because of cyanosis on crying. At home, the baby was feeding well and his weight on admission was 4,350 g. On January 19, a radiograph of the chest showed a supracardiac shadow suggestive of thymic hypertrophy; he received radiotherapy at a dosage of 800 r every four days for four treatments. Cyanosis attacks were then less severe. A respiratory infection was treated by local disinfection and penicillin, but his general state of health declined, his appetite decreased and he began to lose weight. During this period he suffered from occasional episodes of diarrhœa. Starting on February 20, the boy recuperated slowly but was not fit for discharge until March 28, after 69 days in hospital. His weight was then 4,590 g. One week later, on April 4, the boy was readmitted for severe polypnœa with slight fever. On pulmonary auscultation increased murmur was heard, especially at the right base. A roentgen film revealed shadows in the hilar and parahilar regions of the right lung; in the left lung, there was a condensation localized to the upper third of the field. Blood examination gave a white cell count of 8,500, with 3,580,000 red cells and 10.1 g. % of hæmoglobin. Blood calcium level was 8.60 mg. %. Antibiotics were administered but the infant continued to be pale, restless and dyspnœic without coughing. His temperature was 99.4° F. On April 8, the subjective signs grew worse and the child became cyanotic. His temperature rose to 100.4° F.; the general condition continued downhill and he died on April 10.

CASE 2

Boy, born 15 days before term, birth weight 2,720 g. Born December 27, 1953; died July 4, 1954. He was admitted to hospital on April 21, 1954, 4 months old, weighing 3,900 g. For four days, this infant had suffered from a hacking cough and vomiting. On admission rhonchi were heard over the right lung; his temperature was 100.4° F. A roentgen film showed increased hilar shadows and non-homogeneous condensations both at the apex and in the right parahilar region. Throat swabs revealed no pathogenic bacteria. Treament by oxygen and erythromycin was given for 15 days, and brought remission of respiratory signs and a fall in temperature close to normal, but the infant had moderate digestive trouble and clay-coloured stools for two or three days. Nevertheless, on May 10 he was discharged after 20 days in hospital. He had gained only 150 g. in weight. Eight days later, he was brought back to the pædiatric department because of a severe diarrhœa which had started shortly after his discharge from hospital. He had lost 570 g. in one week and now weighed 3,620 g. The temperature was 102° F. In a few days, diarrhœa was controlled and the infant recovered slowly. On June 20, a diagnosis of measles was made and the patient was transferred to the Civic Hospital, where he stayed for eight days. A productive cough and nasal discharge were noted. Throat swabs revealed neither diphtheria bacilli nor hæmolytic streptococci. The lungs showed some rales on auscultation but no special variant was observed in the evolution of measles. On June 28, he was returned to the Enfant-Jésus Hospital. On July 1, dyspnœa was noted with coughing

*Presented at the Annual Meeting of the Quebec Association of Pathologists, April 29, 1955. Received for publication September 27, 1955.
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and more fine rales on auscultation. Continuous oxygen therapy provided some relief, but respiration became grunting and sternal retraction was observed with cyanosis; no roentgenographic examination of the chest was done; antibiotics were given. Respiratory distress grew worse and the child died on July 4, six months and eight days old. The temperature had remained between 99° and 100° F. for the last six days of life.

CASE 3

Girl, born 15 days before term; birth weight, 2,080 g. Born August 20, 1954; died November 30, 1954. Transferred immediately after birth to an institution for illegitimate children, she grew quite normally for about a month. On September 26, a rhinopharyngitis was diagnosed; after the usual treatment, the temperature and pharyngitis receded. Coughing associated with occasional paroxysms of cyanosis persisted. Changing and scattered fine crepitations were heard over the bases of both lungs. For three days there was œdema of the eyelids and legs, with bluish shadows around the mouth and eyes. At that time the urine contained a small quantity of albumin. On physical examination the heart and liver were enlarged. There were only 3,000 white cells per c.mm. During all this period, from September 17 to October 16, antibiotics were administered daily. On October 17, this treatment was withdrawn and surprisingly enough a rapid improvement in the patient's condition occurred; the respiratory syndrome mostly disappeared and the girl's condition remained quite good for a month. Nevertheless, her weight curve was stationary and at three months of age she weighed only 2,900 g. A second episode then appeared of the same respiratory syndrome: dry cough, tachypnœa and sternal retraction. Temperature oscillated between 99° and 100° F. Physical examination revealed minimal signs in the chest. In a few days the syndrome became dramatic: tachypnœa, dyspnœa and cyanosis increased. The respiratory rate remained between 80 and 90, and the girl died in suffocation.

SUMMARY OF OBSERVATIONS

These three observations, though differing at first sight, have many common characteristics. In all three cases, we are dealing with infants who, although not strictly premature, were born underweight. In all three development was slowed up by dyspeptic troubles with or without respiratory infection. They remained hypotrophic until a progressively suffocative syndrome appeared with tachypnœa, dry cough, sternal retraction and cyanosis but without significant hyperthermia. The first two patients died after six and four days of such illness; in Case 2, death apparently followed as a complication of measles. In Case 3, the terminal syndrome lasted 13 days. The similarity of the earlier respiratory episode of 21 days' duration leaves little doubt that this infant had two bouts of the same disease.

In comparison with figures reported by European authors, the age is higher in our cases.

AUTOPSY FINDINGS

At autopsy, besides extreme wasting and dehydration, the lesions were essentially limited to the lungs and were basically identical in all three cases.

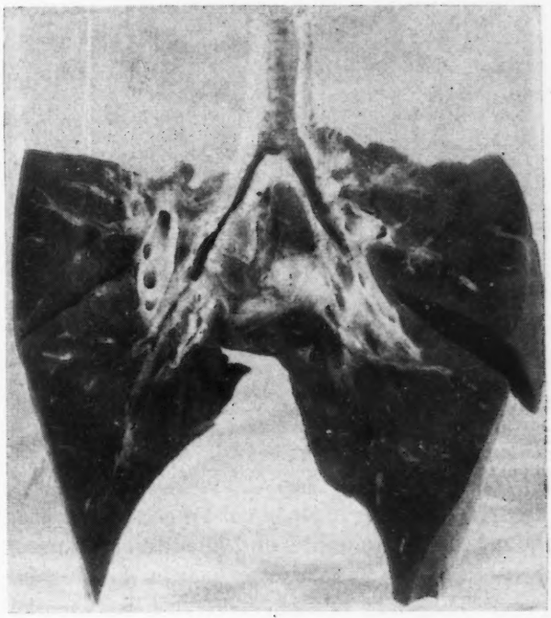

Fig. 1.—Gross specimen of the lungs in Case 3, showing diffuse homogeneous consolidation and dark coloration of the cut surfaces.

Grossly, both lungs were heavy and had a brownish-red coloration with a bluish tinge at the postero-inferior aspects. The tissue was diffusely and homogeneously consolidated, and only restricted pink air-containing areas persisted at the anterior edges. The cut surface was also brownish-red and homogeneous, and a few lobulations could be seen (Fig. 1). Scraping yielded a small amount of pink serous material. The pleura was normal.

Tissue was fixed in Bouin and Regaud fluids, imbedded in paraffin and stained with hæmalum, eosin, saffron and resorcin-fuchsin. Histological examination showed an extreme thickening of all alveolar walls by a dense inflammatory infiltrate made up of lymphocytes with a great number of plasma cells, some of which were morphologically typical while others appeared imperfectly differentiated. There was practically no fibrosis in these thickened walls. The lumina were limited by a single layer of hyperplastic, often vacuolated alveolar cells, with a few thin hyaline-like membranes. These lumina contained very few air bubbles but most of them were completely filled with a peculiar, lightly acidophilic, highly vacuolated material giving a honeycomb appearance that could be confused with aerated œdema fluid (Fig. 2). Some amor-

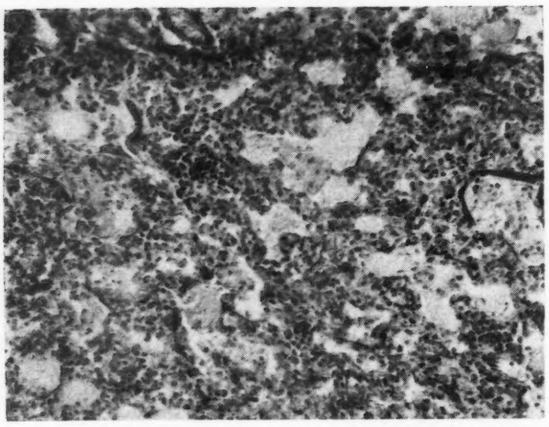

Fig. 2.—General microscopic aspect showing the thick interstitial infiltration, the practical absence of air and the filling of alveoli by a serous-looking substance. Case 2. Hæmalum-eosin-saffron and resorcin-fuchsin (× 200).

phous acidophilic debris and a moderate number of macrophages were also present in the alveolar spaces. The large bronchi were free but smaller ones contained the same foamy substance. A very few macrophages were multinucleated but no inclusion bodies could be found.

The delicate structure of the parasites constituting all this very abundant honeycombed intra-alveolar material is best studied in smears or imprints of fresh lung tissue. In our cases, however, only fixed preparations were available. Special staining of this material allowed undoubted identification of the parasite, but few structural details could be seen. With May-Gruenwald-Giemsa the parasites appeared as minute dots or comma-like basophilic granules surrounded by a clear space and a thin homogeneous bluish capsule of somewhat variable diameter (Fig. 3).

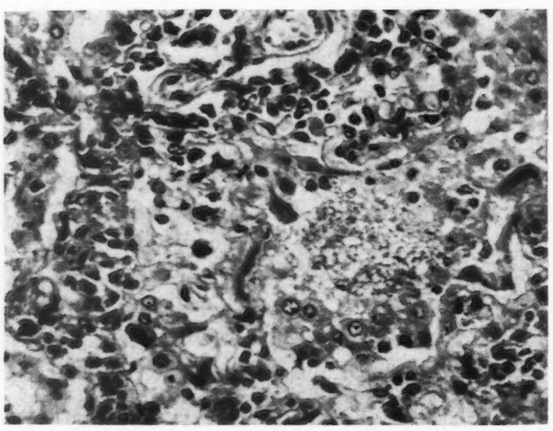

Fig. 3.—Higher power in which the predominantly plasmacellular infiltration is demonstrated, with the hyperplasia of the alveolar cells. In the lumen, minute dots surrounded by a clear space and a thin capsule represent the parasite. Case 3. P.A.S.-Giemsa, section 2.5 microns thick (× 420).

More than one chromatin granule was seen in some of the capsules (Fig. 4). In sections stained with the P.A.S. technique the capsules appeared purple. However, with our material, most convenient fields were observed in sections 2.5 microns thick stained by a combination of P.A.S. and Giemsa methods. It is noteworthy that no parasites were found inside other cells or in the interstitial tissue.

DISCUSSION

The nature of Pneumocystis.—Chagas[10] first described this organism in the lungs of guinea pigs infected with *Trypanosoma cruzi* but considered it to be a form in the cycle of that parasite. Carini[11] found it in the lungs of rats

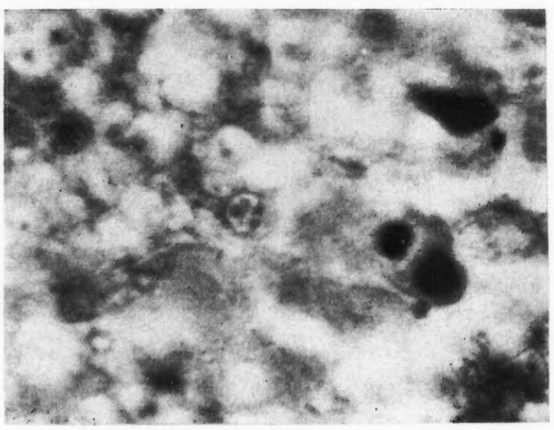

Fig. 4.—Oil immersion aspect of the parasites. At the centre of the field, four spore-like elements are included in a single capsule. Other single parasites, mostly out of focus, can be seen. Case 2. P.A.S.-Giemsa, section 2.5 microns thick (× 2200).

infected with *Trypanosoma lewisi.* Delanoë and Delanoë[12] then observed it in the lungs of Paris rats devoid of trypanosomes. They showed the lack of relationship between the two micro-organisms and gave it the name *Pneumocystis carinii.* Thereafter it was found in many animals and distant countries. Chagas[13] first observed it in a human lung. The patient died of American trypanosomiasis. As mentioned, Vanêk identified it in cases of plasmacellular pneumonia and his observations have been widely confirmed. Vanêk *et al.*,[14-15] Dvorak and Jirovec,[16] and Westphal[17] have studied the ontogenic cycle of *Pneumocystis.* They describe it as round or oval, 2 to 4 microns in diameter, enclosed in a mucous slightly oval capsule 5 to 12 microns in diameter. The parasites reproduce by division into two parts; multiplication into two, four and ultimat-

ely eight spore-like structures inside the same capsule is also seen.

The taxonomic position of *Pneumocystis* is still a matter of discussion. Vanêk and Jirovec place it provisionally in the group Haplosporidia. Simon[18] after tissue culture and animal experiments recently came to the conclusion that *Pneumocystis* is merely an unusual form of *Candida* occurring in specially debilitated subjects. Bruns and Böttger[19] on histochemical grounds classify it as a Saccharomyces.

Biological behaviour.—This parasite is considered non-pathogenic for animals. In humans it is evident that only extremely debilitated subjects are affected. Cytomegalic inclusion disease has been mentioned as an associated condition.[20] In our cases this affection was ruled out and in three cases of inclusion disease from our material no *Pneumocystis* was found. The appearance of pneumonia as a complication of measles in our second case can likewise be attributed to a fall in the biological resistance of the infant.

The parasite is nearly always only extracellular and extratissular, but Bruns[21] has found it in alveolar walls, lymphatic vessels and bronchial veins. Zandanell[22] even reported a case of generalization, in which *Pneumocystis* was found in lungs, liver, spleen, kidneys, intestine and brain. Only two cases have been described in adults, one associated with Hodgkin's disease[23] and the other with myelosis.

The hosts of *Pneumocystis* appear to be small domestic animals and rodents. The exact route of infection is unknown but the oral route by contaminated food and the respiratory system have been mentioned. In European countries, a good number of small epidemics have occurred in hospital wards.

Diagnosis.—Clinical and radiological signs are specific enough for diagnosis. Laboratory control, on the other hand, is at present inaccurate. The parasite has never been identified in pharyngeal secretions. Cultures and inoculations from such material as well as from lung tissue have never given results. Known serological tests are also of no value. Dvorak and Jirovec[16] had no success with intracutaneous tests with an antigen prepared from infected lungs. Vivell[24] recently had positive results with a complement-fixation reaction done with an antigen also prepared from infected lungs. Except for this still experimental test, positive diagnosis still rests on identification of the parasite from autopsy material. As mentioned, smears or imprints of fresh tissue yield the best preparations.

Treatment.—The failure of antibiotics is constant and is even an element in the diagnosis. Treatment at present is mainly supportive and symptomatic. Among chemotherapeutic agents the combination of Arsaphen-quinine and mepacrine-emetine has given best results in the cases studied by Vanêk, Jirovec and Lukes.[15] Leiber, cited by Morhardt,[25] reports good results with follicular hormone.

SUMMARY

Interstitial plasmacellular pneumonitis should be suspected in premature or hypotrophic infants in progressive respiratory distress with little in the way of auscultatory signs, and little or no fever but marked radiological shadows. The disease is rather common in Europe but practically unknown outside of that continent. A parasite, *Pneumocystis carinii*, is considered to be the etiological agent.

The present paper deals with three cases observed in Quebec City. All three infants had a birth weight inferior to the normal and remained far underweight thereafter. In Case 2, the disease appeared as a complication of measles. The third child seems to have suffered from the same pathological process twice. Their age at onset was slightly higher than the average reported.

Gross and microscopic autopsy findings are reported. The problems of taxonomy of *Pneumocystis* and its mode of propagation are briefly discussed. Predisposing factors, methods of diagnosis and therapy of the disease are also mentioned.

The authors wish to thank Dr. de la B. Fortier and Dr. R. Turcot, from the pædiatric department of Enfant-Jésus Hospital, and Dr. D. Lapointe, from the Crèche St. Vincent de Paul, for making clinical material available for the preparation of this paper.

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RÉSUMÉ

La pneumonite plasmo-cellulaire se rencontre chez les nourrissons prématurés ou hypothrepsiques surtout vers l'âge de 2 à 4 mois, et se manifeste par un syndrome de suffocation progressive avec cyanose et opacités radiologiques évidentes, mais les signes stéthacoustiques sont discrets. Il n'y a pas d'élévation thermique considérable et les antibiotiques sont inactifs.

Un parasite, le "pneumocystis carinii" est considéré comme l'agent étiologique. Cette maladie est assez fréquente en Europe, mais pratiquement inconnue hors de ce continent. Nous avons rapporté 3 cas rencontrés à Québec. Il s'agissait de trois enfants un peu débiles, demeurés très hypothrepsiques à cause de troubles digestifs ou d'infections respiratoires. Dans le deuxième cas décrit, l'atteinte pulmonaire est survenue comme complication de la rougeole. Le troisième enfant a présenté deux fois le même syndrome respiratoire. Deux d'entre eux sont décédés à 6 mois et l'autre, à 4 mois. Les autopsies ont révélé une condensation diffuse des deux poumons avec, à l'examen histologique, une infiltration lympho-plasmocytaire interstitielle excessivement marquée et une tuméfaction des revêtements alvéolaires. Les alvéoles étaient remplies d'une substance acidophile vacuolaire qui à l'examen attentif correspondait à des amas considérables de parasites ayant les caractères du pneumocystis.

Les données connues concernant la description de cet organisme, sa taxonomie, son cycle ontogénique et son mode de transmission ont été résumées. Les procédées actuels de diagnostic et de traitement sont aussi brièvement passés en revue.

BRONCHIAL ASTHMA AND ANÆSTHESIA

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WHEN AN ASTHMATIC becomes a candidate for surgery, everyone rightly is a little more concerned than usual. Apart from the obvious hazards of chronic asthma, particularly obstructive emphysema, there is always the possibility of an attack during the induction or maintenance of or emergence from anæsthesia. Such an attack will at the least be worrying, and may prejudice the operation or even the patient's life.

PATHOPHYSIOLOGY

Inspiration requires active muscular action whereas expiration is largely passive and due to the falling of the ribs, the relaxation of the diaphragm, the elastic recoil of the lungs, and atmospheric pressure. In contrast to obstruction higher in the respiratory tree where the difficulty is mostly inspiratory, the asthmatic has the greatest difficulty with expiration. The obstruction in these cases is due to œdema of the mucous membrane, and severe mucus plugging in the smaller and medium-sized bronchi, and probably bronchial spasm as well. The extra difficulty with expiration is due to the narrowing that takes place in the smaller bronchi with the drop in negative pressure in this phase. These factors lead to nearly complete obstruction during expiration. Expiration thus becomes an active process and requires considerable work from the internal intercostal and abdominal muscles. The strength of these muscles must therefore be preserved as far as possible, particularly during an attack.

Some degree of emphysema occurs during every attack of asthma but there is a surprising return to normalcy in the free intervals. In long-standing cases emphysema becomes irreversible with, amongst other effects, destruction of the alveoli and elastic tissue, as well as impaired pulmonary circulation. In severe cases the lung may remain inflated when the pleural cavity is opened at operation or autopsy, because of the destruction of elastic tissue.

The psychological factor is important in these patients and may be largely primary or secondary to the disease. In either case a vicious circle of bronchial obstruction—anxiety—more bronchial obstruction is undoubtedly often present. As well as this, afferent impulses from the affected lungs, probably via the sympathetics, set up efferent vagal stimuli and further bronchial reaction. The latter mechanism operates

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even in normal people, e.g. during bronchoscopy. The benefits that sometimes follow sympathectomy in these cases are explicable on the basis of this reflex arc. Another source of such bronchial reaction is surgical stimuli in the lightly anæsthetized patient, particularly from traction on the stomach or cystic duct. This reflex can be controlled experimentally by atropine, ether anæsthesia or bilateral vagal section. Thiopentone and cyclopropane aggravate this reflex.[1] These three reflex arcs are undoubtedly facilitated in these patients, and a relatively minor stimulus may at times provoke a severe reaction, e.g. spraying the throat has produced sudden death.[11]

Of equal importance to the deficient oxygenation in asthma and/or emphysema is the inadequate carbon dioxide elimination. The respiratory centre becomes depressed by and resistant to carbon dioxide, and hypoxia then becomes an important stimulus to respiration by means of the aortic and carotid chemoreceptors. This elevation of alveolar carbon dioxide level can produce, particularly when raised further by the administration of oxygen and/or respiratory depressant drugs, severe restlessness or even unconsciousness (carbon-dioxide anæsthesia) and, unless corrected, death.[2]

PREPARATION OF THE PATIENT

For elective surgery, one naturally tries to get the patient into an optimum state. As in other cases, the patient should stop smoking and should not have had a recent respiratory infection. Breathing exercises, with emphasis on the expiratory phase,[3] may be very helpful along with symptomatic treatment, as with sympathomimetic ærosols.

CHOICE OF AGENT

Knowledge of the pathology leads to a consideration of what drugs and methods are safest, in theory and in practice.

PREMEDICATION

Small doses of a barbiturate, preferably one that the patient has used previously, should be given. Morphine should *never* be used because it is a respiratory depressant and because it releases histamine which may cause bronchial obstruction. It also exaggerates the vagal reflexes, although depressing the cough reflex. Demerol in small doses is well tolerated; there is less respiratory depression than with morphine, and some bronchodilator action. Atropine is probably preferable to scopolamine, because it is thought to have a greater inhibiting effect on vagal reflexes and its drying action is not so prolonged. Also it does not depress the patient.

MATERIALS

Rubber endotracheal tubes should not be used, as sensitivity to rubber may exist. Portex tubes have never been implicated in this way. Water-soluble lubricants should not be used either, for they contain tragacanth which is highly allergenic. Sterile liquid petrolatum is the least allergenic lubricant available and is quite satisfactory.[4] Local anæsthetics in the lubricant are unnecessary; if the tube is not moved there is no reaction to it, and if it is moved they are ineffective in any case. They also add another possibly allergenic factor.

TABLE I.

ANÆSTHETICS ADMINISTERED TO ASTHMATICS DURING 1950 - 1954 INCLUSIVE

Inhalation	15	vinethene ether 12 nitrous oxide-cyclopropane 2 nitrous oxide 1
Intravenous	2	thiopentone 1 ether 1
Combined	23	(intravenous and inhalation)—18 with intravenous ether as well
Spinal	16	lower abdominal 3—2 with intravenous alcohol as well saddle 13
Block	11	abdominal 2—1 with intravenous ether as well brachial 4 caudal 1 local 4
TOTAL	67	

THE ANÆSTHETIC (TABLE I)

One should try to avoid or reduce the dose of the following drugs:—*Thiopentone* (pentothal), a respiratory depressant and parasympathomimetic drug, which can give rise to bronchospasm; *curare*, respiratory depressant, releases histamine and can cause or aggravate bronchial obstruction; *cyclopropane*, respiratory depressant and parasympathomimetic and can cause bronchospasm.[5] Prostigmine or Tensilon must never be used, of course. Dextran with its allergic potentialities should be avoided. There have been at least two deaths in this area due to acute respiratory failure shortly after a dextran infusion was started. One patient was not a known asthmatic.

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BLOCK ANÆSTHESIA

Patients in *status asthmaticus* should if possible be operated on under local or block anæsthesia. Abdominal cases may be anæsthetized by intercostal block and local infiltration, with procaine or Xylocaine and adrenaline. The intercostal block should be as limited as possible and done in the mid-axillary line to preserve the posterior parts of the intercostal muscles. One half per cent procaine may be poured into the abdominal cavity for visceral analgesia, or the mesentery of the affected organ, e.g. the appendix, can be infiltrated.

SPINAL ANÆSTHESIA

This is satisfactory if the level is kept below the tenth thoracic segment. One probably should not attempt to use a spinal for abdominal operations, for this would seriously weaken the intercostal and abdominal muscles and if an asthmatic attack supervened, as it well might, because of apprehension and the action of the unopposed vagi, respiration would be critically affected.* Ephedrine is the vasoconstrictor of choice and some is given to relax the bronchi whether or not it is needed for the blood pressure. Intravenous alcohol or ether (vide infra) may be used for sedation during the procedure.

GENERAL ANÆSTHESIA

When general anæsthesia is necessary, ether is the drug of choice. It has been known for many years that ether, skilfully administered, not only does not harm asthmatics but also benefits some patients. It was used as far back as 1790 in the therapy of asthma.[7] Ether (in moderate dosage) is a respiratory stimulant; it is also a bronchodilator and expectorant, all desirable characteristics for these patients. With small children an ordinary vinethene-ether† sequence is satisfactory, but with adults, especially those with pulmonary lesions, it may be an unpleasant and sometimes stormy experience, with laryngeal spasm in some cases. Difficulties with the induction might well damage further an already precarious cardiovascular and pulmonary status. Also, many adults nowadays expect or even demand an intravenous induction.

Early in this century, Burckhardt, Kummel and Hasler used ether intravenously for anæsthesia with success.[7] It was also used sporadically in the 1920's. In the early days, up to 3,000 c.c. of a 5% solution was used. Adams[7] in 1944 stated that it had been used at least 5,000 times, although it never gained any wide popularity.

During the last decade it has been used occasionally in the treatment of peripheral vascular disease, and some psychiatric conditions. It is soluble in 5% dextrose d.w. or in normal saline up to 7½%. A 4% or 5% solution intravenously* has been used routinely by us for the induction of anæsthesia in most known adult asthmatics for the past five years, as well as for some other cases. It is probably better to use 5% dextrose d.w. as salt aggravates asthma at times. The solution is run in fairly rapidly through a No. 18 or No. 19 needle so that the patient receives 140-320 c.c. of the solution in about 10 minutes, that is, about 7-16 c.c. of ether. The actual *total dose* of ether averaged 12.5 c.c. The patient sometimes remarks that there is a slight burning in the arm at the start of the drip. Incidentally, the drip runs unusually well, presumably because of local vasodilation. Demerol is added in 12-25 mg. doses during this induction stage. Anything from 25-75 mg. may be added with *at least* three-minute intervals between doses. At this time the patient is usually asleep but rousable. The face mask is now applied and 60% nitrous oxide with oxygen at a high flow given for a few minutes. If intubation is planned, gallamine (Flaxedil) 3-4 c.c. (60-80 mg.) is given intravenously. If the anæsthesia is not deep enough at this point, a very small amount of thiopentone (60-120 mg.) may be given, and after some assisted respiration, intubation performed. If the anæsthesia is too light, or the patient reacts to the tube, a little more thiopentone and/or Flaxedil is added. The ether drip is *now discontinued* and the anæsthesia maintained with nitrous oxide (60-70%); demerol

*Bromage(6) considers that asthmatics do well under extradural block, as intercostal activity may be preserved and bronchodilation actually occurs. He thinks the bronchodilation may be a reflex due to the drop in blood pressure (afferent aortic and carotid baroceptors producing vagal depression). However, it seems more likely that it is due to the block of the afferent sympathetic fibres from the lungs, as well as the afferent somatics from the rest of the trunk.

†Vinethene is seldom given for more than one minute. This obviates convulsions, and also the occasional laryngospasm seen when switching to the ether at a deeper plane.

*The ether solution is prepared by drawing 20-25 c.c. of ordinary anæsthetic ether into a sterile 20 c.c. syringe with a large bore (e.g. No. 18) needle. The rubber seal is removed from a 500 c.c. flask of intravenous solution, e.g. 5% dextrose in water, and the ether is squirted into the *outlet* hole. The drip chamber is now attached to the flask and the mixture *very thoroughly shaken.* If it is not shaken well, the ether will float on top in a visible layer. The ether solution is now ready for use.

and Flaxedil are added as needed. Respirations are assisted when necessary. Too light anæsthesia is indicated by the following: an increase in the respiratory rate (i.e. above 20) and/or movements of the patient, dilatation of the pupils,* and a rise in blood pressure and sometimes the pulse rate. These signs are an indication for more demerol rather than for increasing the nitrous oxide.

Flaxedil 10-20 mg. (0.5 to 1 c.c.) is given when necessary for relaxation.

Restlessness is unusual during induction; only one patient was a little restless at this stage due to a great deal of activity in the operating room. He was easily controlled with a small dose of thiopentone. Nausea and vomiting did not occur during induction. All patients so handled did extremely well and had no evidence of bronchospasm during the operation. Recovery of consciousness may sometimes be relatively delayed, however, (up to 30 minutes) compared with other methods now in use, such as demerol-Mecostrin-nitrous oxide anæsthesia.[8]

CASE REPORTS

CASE 1.—Man, aged 29, acute appendicitis, very apprehensive, "almost constant asthma", has moderate emphysema. Seconal, grains 1½, 90 minutes before operation. Demerol 100 mg., scopolamine 1/150 grain, 45 minutes preoperatively. Anæsthetic, Xylocaine 2% with adrenaline 1 in 250,000; 2-3 c.c. was injected in each intercostal space from the sixth to the twelfth thoracic inclusive in the mid-axillary line on the right side, and 8 c.c. was injected just medial to the anterior superior spine; 3 c.c. was injected into the mesentery of the appendix by the surgeon, with relief; 200 c.c. of 4% ether in 5% dextrose d.w. was given intravenously during the operation, good sedation resulting. Operating conditions were excellent. Asthma is much less troublesome since the operation, i.e. for the last four months.

CASE 2.—Woman, aged 63, carcinoma of the stomach, for gastroscopy. Patient is quite obese and suffers from asthma. Demerol 75 mg., atropine 1/150 grain one hour before operation. Ether 12 c.c. of a 5% solution and demerol 75 mg. in divided doses were given over a period of 15 minutes, then Flaxedil (gallamine) 80 mg. followed by thiopentone 2% 4 c.c.; after inflation with oxygen, another 2 c.c. of thiopentone was given and an orotracheal tube was easily passed. Anæsthesia was continued with 5 l. nitrous oxide and 2 l. oxygen per minute. The gastroscopic instrumentation was difficult, requiring turning of the patient from side to side. The anæsthesia was very satisfactory and the patient was practically awake at the finish.

CASE 3.—Man, aged 55, strangulated umbilical hernia, very obese, status asthmaticus. Bilateral intercostal block with 2% Xylocaine and 1 in 250,000 adrenaline, including 9th to 11th thoracic segments in midaxillary line. Very satisfactory anæsthesia.

CASE 4.—Woman, aged 37, chronic duodenal ulcer, asthmatic, some wheezing, apprehensive, demanded induction in her room. Demerol 100 mg. and scopolamine 1/150 grain were given 45 minutes before operation. The anæsthetic was Phenergan 30 mg. intravenously slowly, followed by 15 c.c. of 5% ether over a period of 40 minutes. She fell asleep and was transported to the operating room. Then demerol 75 mg. was given intravenously followed by Flaxedil 90 mg. The lungs were inflated with oxygen and intubation was easily performed (No. 8 portex). She was maintained with nitrous oxide and oxygen and required 100 mg. more of demerol and 30 mg. more of Flaxedil for the operation, which lasted 135 minutes. The patient did well during and after the operation. Her asthma is improved since the operation, which was eight months ago.

DISCUSSION

Whatever the route by which a general anæsthetic is administered—lungs, vein, etc.—it reaches the blood stream and thence the brain and other organs in a concentration relative to the size of the dose and the rate of effective administration. As deep a level of anæsthesia may be reached in an equivalent time, either by inhalation or by intravenous administration. Therefore the blood and tissue concentration of ether administered by vein (in 10-15 minutes) does not exceed the level usually achieved when it is given by inhalation, and there should not be any qualms about a method that at first sight may seem unorthodox. Also the total dose and the duration of administration are probably not sufficient to exert toxic effects.

It is felt that the ether provides a safe basis for the other drugs used, the doses of which are also reduced. Also, when using ether it is easier to retain adequate spontaneous respirations, and this could be vital when expiration may no longer be an entirely passive process. The anæsthetist's old standby of manual inflation of the lungs may be ineffective in asthmatics because of the serious inadequacy of expiration. Flaxedil (gallamine) is used because it releases less histamine and does not produce bronchospasm. It is also a vagal depressant. Occasionally, some patients who were not asthmatics, and in whom curare or Mecostrin was the relaxant, have developed some asthmatic signs. I have yet to encounter any evidence of asthma in cases in which Flaxedil was the sole relaxant used.

The problem of what particular agent or method to use for any particular patient, disease or operation is relatively new. Twenty years ago nearly all patients received chloroform, ether or nitrous oxide singly or in combination. Actually, chloroform does not harm asthmatics as such, and nitrous oxide, a respiratory stimulant, is

*The pupils react to demerol as they do to morphine and are of definite value in assessing the need for the drug. Their reaction is, of course, the reverse of that seen with ether anæsthesia during the third stage.

satisfactory but difficult to use *alone* on any patient, much less an asthmatic. However, it may be used for very short procedures on patients who are not in status asthmaticus. The patient should breathe 100% oxygen for a few minutes first. The advent of the newer intravenous agents, with their relative ease and speed of administration, pleasantness and lack of toxicity, led to their widespread use, including anæsthesia for asthmatics. Many modern authorities on this continent and abroad either advocate their use in asthmatics, or at least only mention that extra care should be taken and that bronchospasm may occur. Mousel[10] and Walton *et al.*,[11] almost alone, recommend ether. The latter authors report deaths in status asthmaticus which were at least precipitated by morphine (large numbers), demerol (3 deaths), phenobarbital (1 death), Sodium Amytal (amylobarbitone sodium) (1 death), and thiopentone and curare (2 deaths). They stated that "heavy sedation preceded death in nine of our cases and one cannot escape the conclusion that morphine, demerol, intravenous anæsthetics and curare are exceedingly dangerous in an asthmatic". I have seen one death and one near-death in asthmatics under thiopentone-curare anæsthesia.

During the period covered by the present paper, at least five asthmatics were given thiopentone and nitrous oxide anæsthesia, as the history of asthma had either not been elicited or was equivocal and there were no other positive indications of the disease. Three had no discernible ill effect, one developed moderate bronchial obstruction and the other had severe bronchial obstruction. The latter two were controlled in part by Isuprel (isopropylnoradrenaline) intravenously.[12]

Before the development of the above method most adult asthmatics were anæsthetized with the following sequence: oxygen-nitrous oxide-cyclopropane-ether, passing from one to the other as quickly as possible. This method was reasonably satisfactory although certainly more difficult. *After* etherization small doses of curare or Flaxedil were used occasionally with benefit. One case during this period developed laryngeal œdema postoperatively following an easy induction with a Portex tube lubricated with a water-soluble jelly.

It is a fact that some asthmatics have long periods of freedom from attacks after ether anæsthesia. Rectal ether in oil (6 oz. of a 50% solution) at least gives the patient a rest and sometimes aborts an attack. It is my distinct impression, and that of others,[13] that an anæsthetic *plus* a major operation gives even more relief. This is most probably due to stimulation of the pituitary-adrenocortical axis. The same result may be produced by trauma or other severe stress.

Some may wonder why antihistamines have received little mention as yet. This is because they are largely ineffective in asthma; even the most powerful of those available can actually produce asthma, apparently by suppressing the allergic reaction in other parts of the body, e.g. the nose, but not reaching the bronchi in sufficient concentration, so that they react instead.[14]

Although intravenous ether is satisfactory for ordinary cases and has been so used, it is a little more tedious and time-consuming than routine methods. Also recovery of consciousness may be relatively delayed. It was used twice, together with demerol, Flaxedil, and thiopentone and/or Phenergan (promethazine) with nitrous oxide and oxygen nasally, for suspension laryngoscopy and biopsy. The patient's respirations were quite adequate and operating conditions were excellent.

Some of the advantages of the method are: (1) controlled, measured administration; (2) anæsthesia not dependent on the rate or depth of respiration; (3) swift and quiet induction; (4) rarity of postoperative vomiting and pulmonary complications (ether traverses the lungs but once, and none is swallowed); (5) preservation of spontaneous respirations.

There are apparently no disadvantages (other than the time factor) with the 4% or 5% ether solution in the dosage used, although transient hæmoglobinuria has been reported occasionally with a 7.5% solution. Venous thrombosis has occurred with repeated larger infusions. One could eliminate the slight burning (at the start of the anæsthetic), and probably also any remote possibility of hæmolysis, by using a 3% solution. It will be noted that the dosage used in this series is only a fraction of that used by the early workers, and by those treating peripheral vascular disease or psychiatric conditions.

Naturally, whatever the methods used in these cases great care is needed, with adaptation of the drugs and the amounts used to the individual case. Also there are exceptions to *all* rules, e.g. an asthmatic who had had pneumonia several

times was given a spinal anæsthetic for sterilization and appendectomy; other operations which only lasted a few minutes were managed with nitrous oxide or with nitrous oxide and cyclopropane. One very ill patient with asthma and marked emphysema and orthopnœa had to have a carbuncle in his neck incised. He had no preoperative sedation. He was given 100% oxygen to breathe as a preparation for nitrous oxide anæsthesia. The carbuncle was incised after about ten minutes of 100% oxygen. No anæsthetic was added and the patient showed no signs of pain and did not remember the operation. He remained drowsy for fifteen minutes postoperatively. He was apparently anæsthetized with his own carbon dioxide. This was *not* intended.

SUMMARY

1. The pathophysiology of bronchial asthma has been briefly reviewed.

2. A plea for the use of ether in these cases has been made, and a method of administering it intravenously is described.

3. Nearly all adult asthmatics requiring general anæsthesia have been managed by this method during the last five years with complete satisfaction.

4. The prognosis for even the most severe asthmatic, if the above considerations are borne in mind, is excellent.

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INTRATHORACIC NEUROGENIC TUMOURS

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INTRATHORACIC TUMOURS originating from nervous tissue constitute a comparatively well-defined group. Because of their site, in the paravertebral gutter, they often do not give rise to symptoms until they reach a considerable size, and therefore are not infrequently found by accident during a routine chest examination. Neoplasms originating in the posterior mediastinum are, in 92% of cases, neurogenic. Neuromas occurring elsewhere in the mediastinum are excessively rare but have been recorded in the anterior mediastinum, lung, diaphragm and lateral chest wall.

The purpose of this paper is to review the pathology and clinical features of this interesting group of tumours and report on three examples recently studied by the authors.

PATHOLOGY

Stout[1] has suggested that the term "diffuse neurilemmoma" be employed for the tumour commonly called neurofibroma; for the discrete lesion, the expression "encapsulated neurilemmoma" should be used. This proposal appears logical because it indicates, on the one hand, a histogenetic relationship and, on the other, an anatomical difference. Most pathologists are convinced that these tumours are constituted almost exclusively of Schwann cells. This seems to be borne out experimentally by tissue culture, which would indicate that "neurofibroma" is a misleading term. A convenient classification of these tumours is as follows:

I. Tumours of nerve-sheath origin:
   A. Diffuse neurilemmoma
   B. Encapsulated neurilemmoma
   C. Malignant neurilemmoma
II. Tumours of sympathetic origin:
   A. Ganglioneuroma
   B. Sympathicoblastoma
III. Tumours of paraganglionic tissue:
   A. Paraganglioma

A. Tumours of Nerve-Sheath Origin

The tumour here designated as diffuse neurilemmoma is seen in its most classical form as a manifestation of von Recklinghausen's disease.

Characteristically, the lesion may produce beading or diffuse tortuous enlargement of nerve trunks and multiple or solitary non-encapsulated cutaneous tumours.

Histologically, these tumours are composed of Schwann cells, neurites, and fibrous tissue. The neurites are likely to be scanty. The microscopic picture may be differentiated from that of the encapsulated neurilemmoma by the haphazard arrangement of the Schwann cells, prominent reticulation of the intercellular material and absence of palisading. About 13% of diffuse neurilemmomata become malignant, whereas encapsulated neurilemmomas rarely if ever become malignant.

The encapsulated neurilemmoma presents as a solitary, encapsulated tumour, usually but not always attached to a nerve, from which it may often be removed without serious damage. This lesion is generally not associated with von Recklinghausen's disease, although about 18% occur in frank or suspected cases of this disease. These tumours may reach huge proportions in the mediastinum and abdomen and undergo cystic change and hæmorrhage.

Microscopically, they are composed of Schwann cells, which may form nuclear rows, reticulated tissue, or a combination of the two. A few neurites may be found near the former attachment to the nerve. Fibrous tissue varies in amount from area to area and tumour to tumour. Small round cells, plasma cells and mast cells are seen in varying numbers. The blood supply may be so prominent that it suggests hæmangioma.

Malignant neurilemmoma, a tumour of Schwann cells, may arise apparently *de novo* or in diffuse neurilemmoma. In a large series of malignant neurilemmomas (neurogenic sarcomas) Stewart and Copeland[2] found that about one-quarter were in patients having manifestations of von Recklinghausen's disease. Demonstration of nerve origin may at times be quite difficult. Grossly the lesions are encapsulated or circumscribed. Microscopically the picture varies from the relatively acellular fibrous tumour to one with prominent or extreme cellularity.

B. Tumours of Sympathetic Ganglia

Ganglioneuromas may occur in any location containing ganglion cells, but most frequently arise from the thoracic and abdominal sympathetic chains. Stout[1] separates the tumours into differentiated and undifferentiated types, depending on the presence of immature nerve cells.

Grossly, the tumours are usually quite large and encapsulated, and vary in consistency from soft to firm and in colour from yellow to grey. Occasionally there is tumour both in the thorax and spinal canal—the so-called dumbbell or hourglass tumour. Microscopically, the differentiated ganglioneuroma is composed of mature ganglion cells. The ganglion cells may be numerous or sparse and may show various degenerative changes (cf. Fig. 3).

Sympathicoblastoma, although frequently arising in the adrenal medulla, occasionally arises from the sympathetic system in other locations.

Grossly, the tumour is soft, with or without capsule, and varies in consistency and colour, depending upon degenerative changes. Microscopically the picture is varied, depending upon the degree and type of differentiation of the sympathicogonia.

C. Tumours of Paraganglion Cells

The cells destined to become paraganglion cells migrate to the dorsal surface of the sympathetic ganglia to form rounded masses in small depressions in the ganglia, hence the term "paraganglion". These cells reduce chromates in the phæochrome reaction. Grossly, the tumours vary in size, are encapsulated, reddish-brown and soft, and show areas of necrosis.

The histological picture varies from one resembling the adrenal medulla to one so atypical that histological diagnosis is a problem. No malignant intrathoracic paragangliomas have been reported.

CASE REPORTS

Cases 1 and 2 represent examples of the clinical and morphological findings in two cases of nerve sheath tumours seen recently on our thoracic service. Case 3 is an example of a sympathetic ganglion tumour.

CASE 1

Mr. R.M., aged 52, had noticed increasing dyspnœa for the previous year, particularly on climbing stairs. He also complained of an initially non-productive cough which was increasing in severity. The lateral radiograph revealed a massive encapsulated mass arising apparently in the posterior mediastinum (Figs. 1 and 2). This was removed completely at thoracotomy on May 11, 1953. Microscopic examination of eight sections taken from various parts of the tumour showed that the basic architecture of the tumour consisted of numerous

whorled, spindle-shaped cells having, on the whole, plump, elongated fusiform nuclei. Sections taken from the soft portion of the tumour were very cellular. The nuclei were sausage-shaped and showed a marked increase of mitotic activity. The appearance of this area definitely suggested a malignant change to a neurilemmal sarcoma. The capsule appeared intact and it was considered that there had not been any extension of the malignant process by direct spread. This patient had no signs of generalized von Recklinghausen's disease. To date there has been no evidence of recurrence.

CASE 2

Mr. T.T., aged 24, three years previously had had an attack of right lower lobe pneumonia diagnosed radiologically. He now had a dull ache in the right

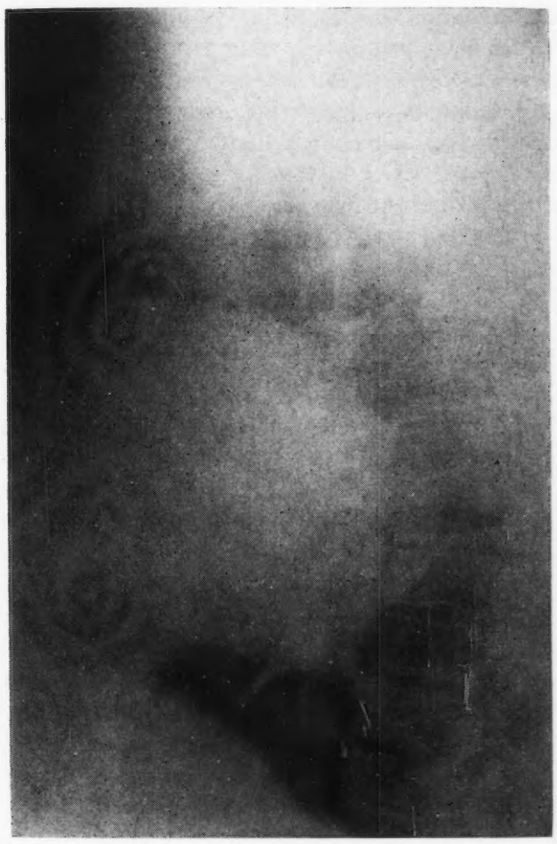

Fig. 1.

lower lobe region. His postero-anterior radiograph showed a "patch of pneumonia", but a lateral film revealed a tumour of the anterior chest wall (Figs. 3 and 4). Thoracotomy was carried out on August 5, 1954, and a retropleural mass approximately 2 x 2½ inches (5 x 6.25 cm.) in diameter and of firm, rubber-like consistency was found at the anterior end of the fifth, sixth and seventh ribs, overlying the costal cartilages. Examination of multiple sections from the tumour showed it to be a neurilemmoma composed of interlacing whorls and bundles of elongated, spindle-shaped cells of fairly regular size, shape and staining qualities. There was no evidence of malignancy.

This case is of particular interest because of its unusual anatomical site and the fact that it was not malignant.

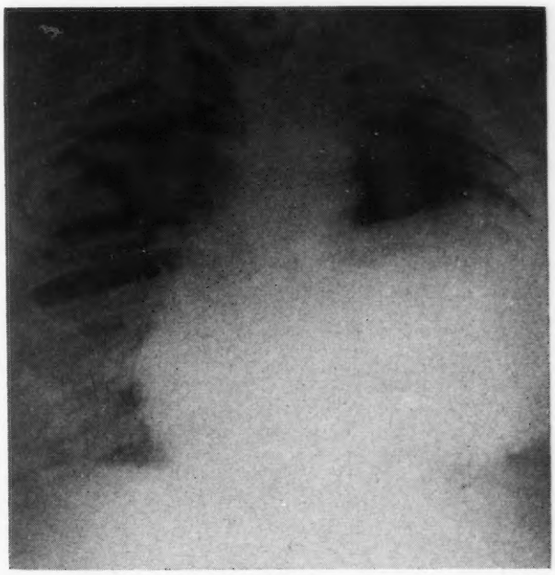

Fig. 2.

CASE 3

L.C., aged 6, presented on April 21, 1951, with no particular symptoms referable to the thorax. In May 1947 at a routine check-up by his doctor radiography of the chest revealed a round discrete mass at the right apex of the lung (Fig. 5). As the child had no symptoms he was followed up by periodic radiography by his doctor, his health remaining excellent. A thoracotomy was performed on July 21, 1951, and a retropleural mass was found in the right paravertebral gutter, extending from the posterior end of the fourth rib to above the first rib. There was no compression of the superior vena cava. The tumour was removed with some hæmorrhage, which was easily controlled. The microscopic sections revealed a ganglioneuroma, consisting of a background of connective tissue and neurilemmal tissue forming distinct nerve bundles. At intervals there were collections of large ganglion cells

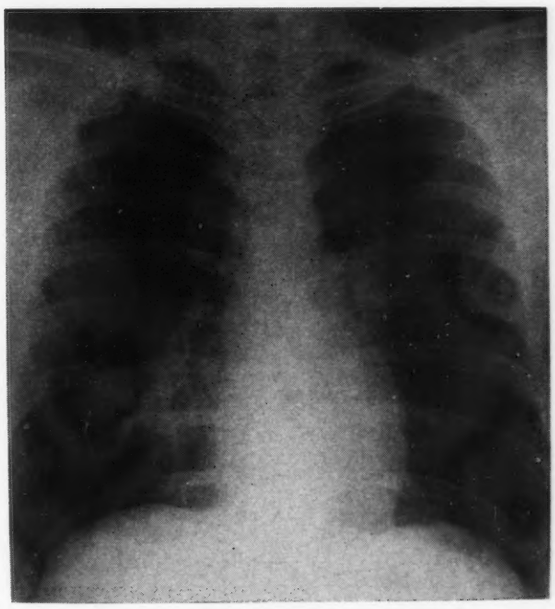

Fig. 3.

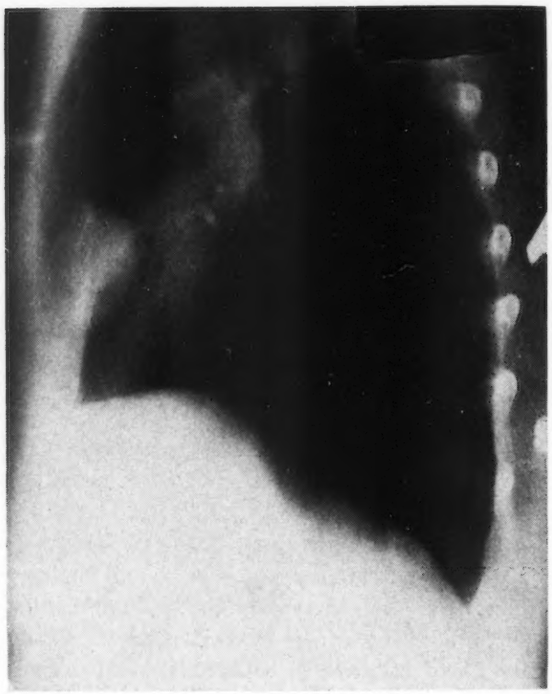

Fig. 4.

containing one or two nuclei with prominent nucleoli. At a recent check-up, there was no evidence of recurrence, although a postoperative Horner's syndrome was still present.

DISCUSSION

The diagnosis of intrathoracic neurogenic tumours is made chiefly by radiographic examination. The appearance is of a clear-cut, sharply outlined, non-pulsating tumour mass with a base located against the mediastinum or spinal column. The finding of the stigmata of diffuse neurilemmomatosis (von Recklinghausen's disease) enhances the likelihood of a neurogenic tumour. When there is a "dumbbell" tumour, special roentgenograms will show widening of the intervertebral foramina. In the same manner, most often in cases of malignancy, defects in the adjacent ribs or vertebræ may occasionally be seen. This, however, may also occur as a result of purely mechanical pressure, particularly when the tumour is located in the superior sulcus; therefore bone change is not a certain sign of malignancy. Lesions to be considered in differential diagnosis include chondrosarcoma of ribs, lipoma, meningocele, aneurysm of the descending thoracic aorta, and œsophageal achalasia. Cough and dyspnœa are the most common initial symptoms. Even in the large tumours, pain is not a prominent feature.

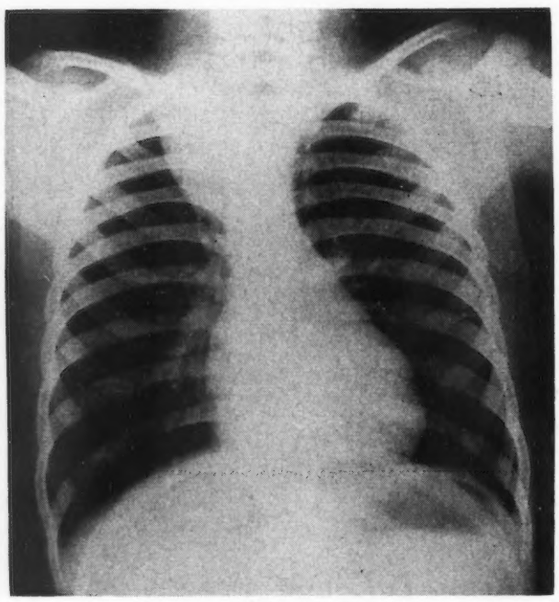

Fig. 5.

Kent and his associates in 1944 collected 105 cases of intrathoracic neurogenic tumours from the literature and found a 37% incidence of malignancy. Harrington[8] in 1949 recorded 51 neuromas of which 5.9% were malignant. Godwin and his associates[9] in 1950 described 24 cases, two (8%) being malignant. If a topographic grouping is made of these cases, namely those situated in the paravertebral gutter and those situated anteriorly in the chest wall, it is found that the latter show a greater percentage of malignancy (88%), while the true tumours of the mediastinum are malignant in 20.3% of cases.

The size of the tumour in this material was no guide to prognosis, although none of the small tumours was malignant. Exudative reaction in the pleura, even if hæmorrhagic, is not a definite sign of malignancy. Intrathoracic neurinoma in connection with multiple neurofibromata or von Recklinghausen's disease is often malignant. The deeper tumours are prone to sarcomatous change, and this is a frequent cause of death.

On the whole it appears that there are no definite clinical criteria for the diagnosis of malignancy; however, if these tumours are discovered accidentally they are in the main likely to be benign. If they present with symptoms, there is more likelihood that they are malignant. Even though it is presumed that many patients can live long with intrathoracic neurinomas, the published figures would indicate that the tumours have so marked a tendency to malignant

transformation that the only effective method of treatment is by radical surgical extirpation.

The surgical technique of extirpation usually involves a transpleural approach for adequate visualization, preferably through a posterolateral rib bed at the level of the tumour. In children an intercostal incision will avoid scoliosis. The major technical difficulty concerns hæmostasis, because the branches of the intercostal vessels adhere to the tumour surface, and are present on the side of the tumour opposite to the operator. Preliminary incision of the parietal pleura completely around the tumour, and elevation off the adjacent ribs, will usually allow enough mobility so that the intercostal vessels are stretched and can be visualized either crossing vertebral bodies, or on the left immediately adjacent to the aorta, permitting ligation and division under direct vision.

SUMMARY

The intrathoracic nerve-sheath tumours are predominantly encapsulated neurilemmomas. They are benign, rarely if ever become malignant, and offer a good prognosis.

The prognosis after removal of ganglioneuromas, especially if differentiated, is good. More adequate follow-up of this lesion is necessary in order to ascertain the prognosis in instances in which all the tumour tissue has not been removed. A malignant course is not to be expected if the tumour is of the differentiated variety—the usual type found in the mediastinum.

Three cases of neurogenic intrathoracic tumours are reported together with the pathology and clinical course of this interesting group of neoplasms. Because of the potential malignant change and in spite of the usual protracted history of well-being, these lesions should all be subjected to radical extirpation as soon as the radiographic diagnosis is made.

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531 Tegler Bldg.

NON-GONORRHŒAL URETHRAL DISCHARGE*

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DURING THE SIX YEARS 1946-1951 more than 600 men appeared at Deer Lodge Urological Clinic with some problem related to urethritis. Many had no symptoms, but wished confirmation that they harboured no venereal disease or that none would occur. Another group with no urethral discharge had a great variety of complaints: frequency, burning on micturition, perineal pain, backache, partial impotence, and premature ejaculation. These two groups received examination, treatment and reassurance.

A third group, numbering 243 patients, were referred to Deer Lodge Urological Clinic with urethral discharge, which we studied and treated. All of these patients had had some form of therapy previously on one or more occasions. Over 95% of the group were investigated and treated in the outpatient clinic only. After a study of all cases, whether acute, chronic or recurrent, the etiological classification in Table I suggested itself.

Usually, at the initial visit, the urethritis could be classified from history and clinical appearance as acute or chronic. In the acute cases a frank yellow or white pus exuded, associated with redness, œdema and tenderness of the meatus. In the chronic ones there was no meatal inflammation and the discharge was white or grey mucus or muco-pus.

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Canad M. A. J.
April 15, 1956, vol. 74

TABLE I.

CLASSIFICATION BY ETIOLOGY
(243 cases of penile discharge)

Prostatitis	130	(54%)
Urethral stricture	13	(5%)
Gonorrhœa	7	(3%)
Functional condition	22	(9%)
Anxiety	16	(7%)
Spermatorrhœa	5	(2%)
Chemical irritation	3	(1%)
"Non-specific urethritis"	41	(17%)
Reiter's syndrome	2	
Intrameatal chancre	1	
Intrameatal warts	1	
Trichomonas infection	1	
Tonsil focus of infection	1	

ACUTE CASES

Efforts were directed to discovering the cause of the acute disease, and to curing it or converting it into a subacute condition. Obviously manipulative therapy or investigation by catheter, sound, urethroscope or prostatic massage was contraindicated in the early stages.

As an office procedure the early morning premicturition discharge could be made into smears and stained by Gram's method. Neisserian infection was thus diagnosed or excluded. If Gram-negative bacilli predominated in the smear, sulfonamides and/or streptomycin were indicated. Patients whose smears showed Gram-positive cocci received sulfonamides and/or penicillin.

An excellent laboratory was at hand, and the meatal pus was cultured for gonococci and for other bacteria whose sensitivity to antibiotics could be determined.

On the whole our patients received 300,000 units of a "depot" penicillin daily for one to three days and one gram of a sulfonamide four times daily. In addition the need for sobriety, continence, adequate rest and forced fluids was emphasized. If after one week's trial this regimen failed and the patient reappeared with a copious discharge, the result of our original culture was available and a suitable antibiotic could be prescribed.

This system of treatment proved satisfactory in the great majority of patients. Certainly nature and time also aided us. One failure on this routine quickly responded to aqueous penicillin, 50,000 units every four hours, in hospital. On the whole, hospital bed rest served best those few patients who obviously would not cooperate on a "duty status" routine. Hospitalization removed from them the temptations of wine and women and assured us that they received their medication. We felt our duty did not end when the discharge disappeared. All cases received further investigation, whether cured, chronic, abeyant or resistant.

CHRONIC CASES

All our patients, whether recently cured acute or originally chronic, received two consecutive diagnostic prostatic massages at intervals of three to four days. Pus counts in the resulting fluid were regularly done, and often cultures were set up. All urethræ were calibrated with a metal bougie. Except for a detailed search of the patient's personal history—often very helpful—these procedures completed the study, the findings of which are tabulated in Table I.

PROSTATITIS (130 patients)

That chronic prostatitis caused such a low percentage of urethritis was a distinct surprise. Many men had an asymptomatic prostatitis which, subjected to alcoholic and/or sexual excesses, often produced an urethral discharge. These 130 patients did have antecedent prostatic infection. In 20% (26 cases) previous gonorrhœa was admitted. In another 54% (70 cases) documents revealed former bouts of urethral discharge, some probably Neisserian in origin. It is possible in some cases that a recent non-specific infection was superadded to the existing prostatitis and served only to direct our attention to the original condition. The etiology of chronic prostatitis is controversial. In this study one case was considered the result of *Trichomonas* infestation, another due to a tonsillar focus of infection. In these days it is a mistake to consider all prostatitis as a sequel to gonorrhœa.

Microscopical examination of the secretion obtained by massage is the only reliable method of diagnosing prostatitis. One negative study is never sufficient to exclude the condition; pus, in some instances, could be demonstrated only after repeated examinations. Diagnosis of chronic prostatitis as the cause of the urethral discharge was considered when (a) pus counts were over 30 to 50 per high-power field; or (b) the pus count was lower, but therapeutic massage cleared the symptoms. It is axiomatic and mandatory that prostatitis be treated by massage. All other measures are ancillary.

Table II illustrates part of this principle. In no patient of this group was drug therapy alone

TABLE II.

DRUG TREATMENT OF PROSTATITIS

Sulfonamides alone failed	12 out of 12 cases
Arsenicals alone failed	13 out of 13 cases
Penicillin alone failed	9 out of 9 cases

adequate. Prostatic massage itself, sometimes aided by antibiotics, controlled the condition.

URETHRAL STRICTURE (13 patients)

Five per cent of the series had urethral stricture and no other condition promoting the gleet. One man had both stricture and prostatitis. It has been variously reported that 65% of patients with stricture complain of meatal discharge on their first visit to the doctor.

GONORRHŒA (7 patients)

It is not paradoxical that seven cases of gonorrhœa appeared in this study. These men were referred as cases of nonspecific infection and were correctly categorized after investigation by sound, prostatic massage or culture.

FUNCTIONAL GROUP (22 patients)

This group presented problems in diagnostic classification and management. They had a variety of symptoms: frequency; burning; terminal hæmaturia; vague perineal, scrotal, groin, or back discomfort. All had a subacute type of urethral discharge, commonest on awakening. Urinalyses revealed mucus and a few pus cells. After excluding infection and stricture these patients were interviewed privately. This technique revealed the following functional causes of gleet: (a) coitus interruptus, 5 cases; (b) sexual excesses, 9 cases; (c) "heavy necking", 6 cases; (d) masturbation, 1 case; (e) abstinence (?), 1 case.

ANXIETY GROUP (16 patients)

All this class had worries, some gleet and the same symptoms as the functional group. No urogenital disease could be found. Many had been diagnosed as cases of anxiety neurosis in the psychiatric department. All were guilty of too much searching and too much manual stripping of the penis.

SPERMATORRHŒA (5 patients)

These five men were frankly psychopathic. They had profuse discharge loaded with sperms and no sign of infection. As a group they responded well to œstrogens.

CHEMICAL URETHRITIS (3 patients)

This inflammatory condition followed strong intraurethral medication—often self-administered for various reasons. Some resulted from hypersensitivity to the prophylactic kit. One case due to deliberate instillation of self-made soap pellicles was associated with intense irritation and watery discharge.

NONSPECIFIC URETHRITIS (41 patients)

This condition was cautiously diagnosed, but its classification as an entity appeared warranted. Prostatitis, stricture, and gonorrhœa all required careful exclusion since the clinical appearances were similar. From this study we consider nonspecific urethritis an infection, its venereal origin becoming less obscure as the years pass. Thirty-four of 38 patients whose history was available admitted exposure. Three married men could probably trace their infection to intercourse with recently confined wives. The incubation period varied from 3 to 35 days (average 15 days). These men had had acute purulent urethral discharge for one to three days before seeking advice.

TABLE III.

RESULTS OF THERAPY IN 41 CASES OF NONSPECIFIC URETHRITIS

Sulfonamides successful	26 cases
Sulfonamides and penicillin successful	3 cases
Novarsan successful	3 cases
Aureomycin successful	4 cases
Streptomycin successful	1 case
Terramycin successful	1 case
Aqueous penicillin successful	1 case
"Depot" penicillin successful	2 cases

Treatment was required and on the whole proved effective. Sulfadiazine eradicated the disease in 26 of 31 trials. For the five failures Novarsan, aureomycin, streptomycin, and "depot" penicillin each effected a cure. For the fifth, who received penicillin, Novarsan, and aureomycin separately, terramycin promptly arrested the condition. Combined sulfonamide-penicillin therapy cleared up three out of four cases treated. The fourth patient had received both drugs for days in his unit lines. Bed rest in hospital with aqueous penicillin completed a cure in one week. Urethral instillations were

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infrequently tried and rarely successful in any of the whole series. The very few urethroscopic examinations made afforded little help in diagnosis or therapy.

SUMMARY

A group of 243 patients with urethral discharge was studied and treated at Deer Lodge Urological Clinic during the years 1946-1951. Our review of this series reveals that prostatitis and stricture accounted for 59% of cases of urethritis. The survey also indicates that non-specific urethritis—probably of venereal origin—was a clinical entity in 17% of the group.

CONCLUSIONS

Prostatitis and stricture are major etiological factors in urethritis. When either condition exists, treatment is required to effect cure or at least prevent recurrence.

Although sulfonamides, arsenicals or antibiotics eradicate or lessen the discharge in urethritis, the patient should not be dismissed until investigation is complete.

Case Reports

INFECTIOUS MONONUCLEOSIS*

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IN THE PAST there has been a tendency to treat infectious mononucleosis with indifference rather than with the concern it merits.

As a result of their experiences at the University of Missouri Health Service, which admitted last year for inpatient care about 60 cases of infectious mononucleosis out of a student body of 8,000, the authors have been left with the impression that the disease is undergoing an absolute increase in incidence, and are convinced that it should receive more recognition than it has apparently been accorded in the past.

Hoagland[1] has recently concluded as the result of an uncontrolled study that intimate oral contact with salivary exchange is the mode of transmission of infectious mononucleosis. This might appear on the surface to be a reasonable explanation of why the disease has a predilection for the young adult. Whether Hoagland's theory be true or not, unanimous predictions concerning the ever-increasing size of university student populations should lead us to anticipate that infectious mononucleosis will assume an increasingly significant role in the story of diseases affecting the adolescent and the young adult.

With an increase in the incidence of the disease, one would expect to encounter more frequently cases manifesting the unusual features or complications which characterize infectious mononucleosis.

Reports describing complications or primary manifestations involving practically every system of the body have appeared in the literature.

Hæmatological complications that have been reported have been hæmolytic anæmia[2, 3] thrombocytopenic purpura,[4] and lymphoma[5, 6] occurring simultaneously with or subsequent to the episode of infectious mononucleosis. Reports concerning ocular involvement have described the occurrence of cases of papillœdema and iridocyclitis[7] and optic neuritis.[8] Herpetic stomatitis[9] and diarrhœa[10] are amongst the gastrointestinal complications that have occurred. Attention too has been directed to the manner in which the heart may be affected,[11-13] and the genitourinary system as well.[14] Cases of liver involvement such as hepatitis and cirrhosis[15-19] have been well documented. Even the pulmonary system has been reported as affected by infectious mononucleosis, at least to the extent of pleural effusion and pneumonitis.[20]

Of special significance, of course, is the fact that the nervous system not infrequently is a site of affliction, as indicated by numerous reports of Guillain-Barré syndrome and other types of neurological involvement.[21-28] Finally, rupture of the spleen has come to be recognized as

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one of the more serious complications which may occur in association with infectious mononucleosis.[29, 30]

And so with the purpose in mind of directing attention to these features of the disease, it was felt worth while to report four instances of complications which occurred in cases of infectious mononucleosis admitted to a university health service within a relatively short period of time.

CASE 1

P.Z., male, aged 24, admitted October 5, 1954; discharged October 11, 1954.

This student had been treated as an outpatient for about a week before admission for persistent sore throat, low-grade fever and tender cervical lymph nodes. Three days before admission he began to have epistaxis which kept recurring in spite of repeated treatment in the ENT clinic. On the day before admission, following his participation in a touch-football game, he noted a large ecchymotic area on his right shoulder. This prompted his visit to the clinic on the following day, as a result of which he was admitted. Of interest on physical examination were the large areas of ecchymosis noted on the shoulders and back. Petechiæ were also noted over the axillæ, the upper and lower extremities and both buttocks. The anterior cervical, axillary and inguinal lymph nodes were moderately enlarged. The spleen was easily palpable. The hospital course was uneventful except for the fact that the patient continued to have persistent epistaxis of mild degree which ceased after about four days. After several days it was noted that the purpura was fading slowly.

Significant laboratory data were the platelet counts which varied from 53,000 per c.mm. on the day of admission to 5,000 five days after admission, to 150,000 five weeks after discharge. The bleeding time (Duke's method) was reported as 14½ minutes on admission, 60 minutes seven days after discharge, and 2½ minutes three weeks after discharge. The hæmoglobin value ranged from 10.6 g. % seven days after discharge to 15 g. % three weeks after discharge. The differential blood smears revealed the presence of lymphocytosis and increased numbers of monocytes. The heterophil antibody determination was reported as negative on two occasions. That this will occasionally occur in infectious mononucleosis is well documented. A review of the patient's blood smears by Dr. Henry Sweets, Director of Laboratories, University Hospitals, was reported as follows. "The smear is characteristic of early infectious mononucleosis complicated by a greatly reduced platelet count."

The complication in this case was thrombopenic purpura, the primary manifestation of which was epistaxis.

CASE 2

S.S., female, aged 19, admitted October 25, 1954; discharged November 10, 1954.

This student was admitted with the chief complaints of malaise and anorexia of three days' duration. The only physical finding of significance upon admission was a moderate cervical adenopathy. On the fourth hospital day it became apparent that she was developing the characteristic angina of infectious mononucleosis. This phase lasted seven days.

Of interest were the hæmatological data which showed the red cell count to range from 3.55 million to a normal figure of 4.76 million per c.mm., with the hæmoglobin ranging from 8.6 g. % to a normal of 12.4 g. %. The heterophil antibody titre was positive in a dilution of 1:3584. The results of a fragility test and serum bilirubin determination were within normal range. A Coombs test was negative.

This, then, was a case of anæmia of moderate degree developing during the course of infectious mononucleosis.

CASE 3

J.R., male, aged 19, admitted November 16, 1954; discharged November 28, 1954.

This student was admitted because of severe abdominal pain, fainting and vomiting coming on shortly after he had sustained a blow in the abdomen during an intramural football game.

Significant findings on physical examination related to the abdomen, which was diffusely tender. It was noted that the patient complained of right shoulder pain when the abdomen was palpated. The blood pressure was 80/50, white cell count 18,650 per c.mm. with 59% neutrophils, 38% lymphocytes, 2% monocytes and 1% basophils. A preoperative diagnosis of rupture of spleen was made and this was confirmed at operation. At the time of operation, November 16, 1954, it was noted that the spleen appeared larger than usual. Postoperatively, more detailed examination of the patient revealed the presence of cervical adenopathy of moderate degree. A history of sore throat and malaise for 10 days before admission was also elicited. The heterophil antibody titre determined on November 19, 1954, was reported as positive in a dilution of 1:7168. The pathologist's diagnosis of the operative specimen was "rupture of spleen with infectious mononucleosis."

This, then was a case of traumatic rupture of spleen in a patient with infectious mononucleosis. The potentialities of this disease are of impressive significance, when one realizes how prone university students are at times to ignore symptoms of disease and continue to participate in vigorous activities even though they may be ill.

CASE 4

H.S., male, aged 23, admitted January 5, 1955, discharged January 16, 1955.

This student was admitted because of low back pain and anorexia of several days' duration. He had also noted his urine to be orange in colour. For a week before admission he had noted sore throat and malaise.

Physical examination revealed slight scleral icterus, post-pharyngeal exudate and epigastric and right upper quadrant tenderness. The spleen was not palpable. On admission the white cell count was 11,600 per c.mm. with 15% neutrophils, 79% lymphocytes, 5% monocytes and 1% eosinophils. A heterophil antibody determination on January 8, 1955, was positive in a dilution of 1:7168. Total serum bilirubin was 3.75 mg. per 100 c.c. The patient's clinical course was relatively mild and he made an uneventful recovery, being discharged January 16, 1955.

The complication in this student was a hepatitis of a rather mild degree.

The occurrence of the cases described above has served to focus our attention upon the fact

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that so-called unusual complications may not be so unusual after all, and has emphasized the fact that those responsible for the medical care of university students should be alert to the hazardous potentialities of infectious mononucleosis.

SUMMARY

It seems likely that with the increasing growth of university student populations, infectious mononucleosis will become a disease of increasing significance as an important cause of morbidity in the college student. The complications formerly alluded to as unusual may well become more commonplace manifestations of the disease when recognized as part of the picture of infectious mononucleosis.

The authors wish to express their appreciation to Dr. William A. Sodeman, Chairman of the Department of Medicine of the University of Missouri, for his helpful criticism of this paper.

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SPINAL EPIDURAL METASTASES IN MALIGNANT LYMPHOMATOUS DISEASES*

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EXTRADURAL metastatic lymphomatous lesions are of relatively infrequent occurrence. If neurological signs are noted when the disease is systemically active, or if the primary manifestation is referable to the spinal cord or surrounding structures, the diagnosis of epidural metastases may be suspected and can be established by laminectomy.

There are occasions, however, when the primary tumour may have been treated many years before symptoms or signs referable to the nervous system are noted. Under such circumstances, one may erroneously attribute the neurological manifestations to a local benign or independent malignant lesion. We wish to report two cases where solitary lesions had been excised four and five and a half years respectively, before the development of backache.

CASE 1

A.T., a 24-year-old married white woman, was first admitted to the Jewish General Hospital on June 23, 1946, complaining of pain and tenderness over the middle third of the right leg of three days' duration. She had suffered a minor trauma five weeks previously and was being treated for phlebitis by another physician. The pain was constant, she was slightly febrile and there was slight tenderness over the middle third of the right leg. Radiography revealed a destructive process in the middle third of the fibula. The remainder of the physical examination, including radiography of the chest, pelvis and spine, was negative.

A biopsy of the fibula on July 4, 1946, was reported by Dr. M. A. Simon as atypical Ewing's sarcoma.‡ The diseased portion of the fibula was excised on July 11, 1946. The histological findings were again interpreted to show an atypical Ewing's sarcoma. A supracondylar amputation was carried out on July 29, 1946. There was no residual tumour.

She had a miscarriage on June 13, 1948, and a normal delivery on June 21, 1950, and remained well for more than four years. She was readmitted on September 15, 1950, because of severe low back pain. All investigations were negative. The patient failed to respond to bed rest and physiotherapy and was unable to tolerate a plaster cast. An epidural lesion was suspected and she was referred to Dr. William Cone of the Montreal Neurological Institute. A questionable abnormality at L4 was noted in the myelogram.

An exploration of segments L3-S1 was carried out by Dr. Cone. An extradural tumour, 1½-2 cm. in diameter, was found lying behind the body of L4 on

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‡Because of the close relationship between Ewing's sarcoma and reticulum cell sarcoma, this case is included in our paper.

the right. There was compression of the root of L4 posteriorly. The pathological diagnosis was metastatic sarcoma. She then received a course of deep x-ray therapy locally.

In October 1953, three years after the laminectomy and seven years after the amputation, a chest radiograph showed a large soft tissue mass overlying and eroding the seventh rib anteriorly. This mass responded well to x-ray therapy.

The patient continues to have inconstant subcostal and low back pain, but is otherwise well.

CASE 2

M.M., a white boy aged 15 years, was admitted to the Jewish General Hospital in January 1942 because of a mass in the right side of the neck of three to four months' duration. The remainder of the examination was negative.

A biopsy of the mass disclosed a lymphosarcoma. The local area was irradiated.

This patient remained well for five and a half years. During July 1947, he began to experience pain in both shoulders. There were no positive neurological or roentgenological signs. By the time the patient was admitted to the Montreal Neurological Institute, under the care of Dr. A. Elvidge, a neurological examination revealed tenderness over D3 and D5, staggering gait, Rombergism to the right and diminished sensation to pinprick below D5. Radiographs of the dorsal spine, ribs and chest were negative. A myelogram showed a complete block at D4.

A dorsal laminectomy was performed by Dr. A. Elvidge, who removed an anterolaterally placed extradural tumour at D3, 4, and 5. The pathological diagnosis was lymphosarcoma. Postoperatively the patient did well and the neurological signs improved. He subsequently received x-ray therapy locally. This patient is well.

REVIEW OF THE LITERATURE

The first example of spinal epidural lymphosarcoma was recorded by Guillain, Alajouanine, and Périsson[1] in 1925. The tumour in this instance caused compression of the spinal cord. In 1930 Davison and Michaels[2] reported 27 cases of lymphosarcoma; seven of the patients had neurological symptoms. The diagnosis was established by either biopsy or necropsy. Of these, three had spinal epidural tumours with cord compression. Verda,[3] in 1944, stated that 15-25% of patients with lymphosarcoma exhibit neurological symptoms at some stage of the disease, and that 10-15% will show epidural tumour masses at necropsy. Sparling *et al.*[4] in 1947 reported 118 cases of malignant lymphoma with necropsy findings. In six instances the spinal epidural space was involved. The same authors also reported seven additional cases with positive epidural biopsies and two cases from another hospital. Thus, in the entire series of 128 cases reported by Sparling *et al.*, involvement of the spinal epidural space was noted 15 times.

Love *et al.*[5] in 1954 reported 39 cases of primary "spinal" cord tumours of the lymphomatous type without obvious lesions elsewhere in the body. Fourteen cases were epidural lymphosarcomas, 11 reticulum cell sarcoma, 7 Hodgkin's disease, and 6 admixtures of small and large cell sarcomas; 1 was classified. Rodin *et al.*[6] in 1954 reported a lymphosarcoma of the spinal epidural space in a seven-year-old child.

CLINICAL FEATURES

According to Verda,[3] 40% of extradural growths give rise to root pain, paræsthesiæ, and cord compression resulting in alteration of muscle power and alteration of reflexes. Sparling *et al.*[4] state that in lymphomatous disease involving the nervous system the most frequently encountered syndrome is that caused by an acute or subacute compression of the spinal cord due to spinal epidural deposits. In such instances pain in the back precedes or accompanies the development of a paraplegia with corresponding sensory loss. These signs or symptoms can develop in the course of a few days or months. In some of their cases the neurological symptoms preceded the involvement of other viscera. The true nature of the disease escaped recognition until a biopsy or an autopsy was performed.

In a discussion dealing with minimal neurological findings in spinal cord tumours, Moersch, Craig and Christoferson[7] found pain in the distribution of a sensory root to be the outstanding and primary complaint.

X-RAY FINDINGS

In some instances ordinary x-ray studies of the spine may be of diagnostic value. In Love's[5] series, 33% showed erosion of the body and pedicles of the vertebræ. Verda[3] states that 80% of epidural spinal cord tumours may be diagnosed by plain x-ray studies. The major changes which he noted were: (1) bone destruction; (2) altered pedicles and interpediculate distances; and (3) distortion of the paraspinal tissues. All authors are agreed that myelography is the most reliable procedure for establishing the diagnosis and for localization of the lesion.

In our two cases plain x-ray studies of the spine were negative, but myelography revealed a definite lesion in one and suggestive minimal changes in the other.

ORIGIN OF LYMPHOMAS OF THE SPINAL EPIDURAL SPACE

In the majority of instances involvement of the spinal epidural space is secondary to a

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lymphomatous lesion elsewhere in the body. The most frequent sources are the mediastinal or retroperitoneal lymph nodes. Thus, according to Verda,[3] there may occur: (1) extension into the spinal epidural space through the intervertebral foramina; (2) direct invasion of nearby vertebræ with eventual invasion of epidural space; (3) direct invasion as a result of metastatic involvement of the vertebræ; (4) hæmatogenous and lymphogenous spread to the spinal epidural space, resulting in implantations along various levels in the epidural space. Direct extension into the spinal epidural space from adjacent vertebræ and mediastinal, retroperitoneal or cervical lymph nodes through the intervertebral foramina is probably the most frequent mechanism. Lymphomatous masses in the pharynx or cervical nodes may extend directly through the bones at the base of the skull to involve the intracranial dura (Sparling[4]).

Sparling[4] reports several cases in which two unconnected spinal epidural deposits occurred. Love[5] found that the thoracic spine was most frequently involved, followed by the lumbar vertebræ, the lumbosacral segment and the cervical spine, in declining order of frequency.

An unsettled question is whether or not lymphomas can arise in the spinal epidural space as primary lesions. Browder and de Veer,[9] in numerous examinations of the spinal epidural structures from autopsy specimens, found no lymphoid tissue, but state that small foci of lymphatic tissue may be present in the epidural space. Ham[10] states that the spinal epidural space contains fat and veins, but does not mention the presence of lymphoid tissue. Kubie (cited by Verda[3]) states that lymphocytes are present in the form of nests in the crotch of bifurcated venules or arterioles in the epidural space. These nests of lymphocytes can give rise to lymphomas. Luce[8] stated that the spinal epidural space contains adipose tissue and an arteriovenous plexus with accompanying lymphatics. Sparling[4] is of the opinion that lymphomas from lymphocytes, lymphoblasts and plasma cells do not arise within the brain, spinal cord or any structure outside the dura. He believes, however, that tumours which are derived from histiocytes, e.g., Hodgkin's sarcoma and reticulum cell sarcoma, may be primary.

The reticulo-endothelial system is present in the entire body, and if lymphosarcoma arises from the reticulo-endothelial system, these tumours can occur as a primary lesion in the epidural space.

TREATMENT AND PROGNOSIS

If the neurological signs are noted when the disease is systemically active, x-ray therapy and nitrogen mustard may be employed. If neurological signs suggesting cord compression occur many years after a solitary quiescent focus has been treated, it will probably be preferable to establish the diagnosis by a decompressive laminectomy, followed by x-ray therapy. There are occasions when the neurological signs are limited to the nerve roots. It would then appear to be permissible to employ focal irradiation first. Rhizotomy has been employed by others[5] for severe pain.

The prognosis, with regard to prolongation of life, is generally favourable when the disease is limited to the epidural space or is secondary to a controlled lesion elsewhere in the body. The prognosis is poor when the disease is generalized and active and paralysis due to cord compression is present.

In Love's[5] series of 39 cases, several relatively long survivals are recorded. Three patients with reticulum cell sarcoma were alive for eight, nine and ten years. One patient with Hodgkin's sarcoma was alive 18 years after laminectomy and irradiation. Our first patient is alive and well nine years after a supracondylar amputation for an atypical Ewing's sarcoma, and five years after laminectomy and x-ray therapy for a solitary spinal epidural metastasis. Our second patient is alive and well 13 years after the diagnosis of a lymphosarcoma was established, and eight years after a decompressive laminectomy and x-ray therapy for a spinal epidural metastasis.

SUMMARY

Two cases of spinal epidural metastases are presented. In one instance the primary source was an atypical Ewing's sarcoma of the fibula, in the other a lymphosarcoma which primarily and unilaterally involved the cervical lymph nodes.

As noted in this report, there are occasions when a solitary primary tumour may have been treated many years before symptoms referable to the nervous system are noted. This possibility must be kept in mind, for the proper treatment of metastatic epidural lymphoma may prolong life in some instances.

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A CASE OF FATAL CYCLIC VOMITING

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CYCLIC VOMITING, also called acetonæmic vomiting, is at best described vaguely in most textbooks as an entity by itself, but there is little agreement as to its etiology. The condition is usually mentioned as one of minor importance, and there is very little current literature on it. Most authorities regard it as a functional disease with an emotional basis, usually self-limited to the time of puberty and changing gradually to the migrainous symptom-complex later on in life.

The following case is reported because of its striking and severe features and fatal outcome and also to illustrate problems encountered in a small-town general practice where consultation is not available and where laboratory facilities are rudimentary. It should illustrate the fact that this condition is really a disease by itself, and that at times it may become extremely serious.

The patient, a 13½-year-old girl, had had cyclic vomiting since the age of three. When she was seen, 24 doctors had been consulted in the previous 10 years, and all possible investigation had been done, including blood sugar estimation and radiological survey, without finding the cause; a well-known neurologist had also seen the case. When seen for the first time by the writer in May 1954, she had been vomiting steadily for three days with some blood in the last vomitus; she was dehydrated and very excited, with a pulse rate of 156 and a blood pressure of 95/65. This was at a time when chlorpromazine (Largactil) was first being described as an anti-emetic, and this drug was given intramuscularly (30 mg.) coupled with intramuscular phenobarbitone (0.2 g.); this stopped the vomiting dramatically and the patient was well thereafter. Whenever an attack started, oral chlorpromazine aborted it; for the first time in her life, she was some six months without any attack. She gained weight and developed normally.

The vomiting had occurred almost every month or so since the age of three, each bout lasting for two to four days; she would vomit everything she ate and more. At times, she was two to three months without any trouble. Some five years previously, one episode was rather severe, and the attending physician, having noted that her pupils were unresponsive to light, feared for her life, for she was deeply unconscious; however, she always managed to come out of these attacks apparently intact and, in the words of her mother, she would be fine the minute she started to produce urine. Her history was uneventful. She was the result of a normal delivery and she had had measles, varicella and rubeola; she was the fifth child of a family of six children, and there was no consanguinity in the parents. The patient had not yet menstruated, but there was axillary and pubic hair as well as slight breast development. It is interesting to note that one sibling had died of a similar disease some 11 years previously, at the age of five, after having had cyclic vomiting for 2½ years; this brother died after three days of vomiting. The parents had been urged without success to have an electroencephalogram done to rule out the possibility of an epileptic equivalent.

Around January 15, 1955, after six months of well-being, the patient started to have another attack, which was in every way similar to the previous ones: copious vomiting of greenish liquid, inability to retain any food, and marked agitation. She was treated in the usual way with chlorpromazine by mouth at the onset, then intramuscularly, but to no avail. She continued to vomit and went progressively into severe dehydration and acidosis. On admission to the hospital, on January 20, 1955, she was in severe shock, with a blood pressure of zero, no pulse at the wrist, cardiac rhythm irregular at 160/min., gasping respirations at 60/min., rectal temperature of 100.3° F., dry skin with loss of elasticity, no pupillary light reflex, soft eyeballs, sunken eyes, coated tongue, acetone breath, mouth and eyes kept open, cold and cyanosed hands and feet without capillary return on pressure, flaccid extremities, no tendon reflexes, no neck rigidity, no Babinski sign, a soft abdomen, crepitant rales in the lower third of the right lung with slight dullness. On admission, the CO_2 combining power was 15%, and a catheter specimen of urine had a density of 1,022, colour amber, acid, albumin 4 plus, acetone 4 plus, bacteria 2 plus, epithelial cells 3 plus, red cells 2 plus, white cells 2 plus, hyaline and granular casts 2 plus. It was presumed that she had severe kidney damage from previous attacks as well as from this acidotic coma with very little urine output. Treatment consisted of use of an oxygen tent, intravenous Cedilanid and ACTH (30 units), Fortimycin, and 3,000 c.c. of intravenous fluid, mostly Ringer-lactate. Total urinary output on the first day of admission was 650 c.c. By nightfall, some 12 hours after admission, there was return of the pulse at the wrist at 136/min., irregular but of good volume, the blood pressure was 75/58, feet and hands were warm and pink, breathing was easier and slower, the patient was moving her head without any reaction to pain yet, but with pupillary light reflex.

On January 21, her second day in hospital, the CO_2 combining power was 25%, non-protein nitrogen 62 mg., hæmoglobin value 12.2 g., red cell count 4,020,000, white cell count 8,200 with a normal differential. Blood sugar was 125 mg. %, chlorides 702 mg. %, Na 437 mg. %, K 14 mg. %. Rectal temperature 103.4° F. The patient was moving her head and extremities; pulse rate was 160 and irregular, blood pressure 100/65. We noted a slight abdominal distension, but there was passage of gas. Chest radiographs showed small areas of bronchopneumonia at both bases and diaphragmatic elevation due to abdominal distension. A vein was cut down on, a polyethylene tube inserted, and the patient given 1,500 c.c. of fluid. Urine output that day was 205 c.c. Supportive therapy with Cedilanid, ACTH, and Fortimycin was continued.

On January 22 the patient was gradually regaining consciousness. The abdomen was tympanitic and distended; rectal and Cantor tubes were inserted with

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relief. The CO_2 combining power was 29%, total intravenous fluid 2,785 c.c., with 230 c.c. of urine.

On January 23 moonface and swelling of face and neck developed, attributed to the ACTH, which was stopped. The patient was fully conscious now and co-operative, but restless, complaining of some abdominal pain; CO_2 32%, non-protein nitrogen 110 mg. %, chlorides 657 mg. %, hæmoglobin 10.3 g., red cells 3,700,000, hæmatocrit 34%; intravenous fluid intake 3,380 c.c., urine 440 c.c., vomitus 300 c.c.

On January 24 the patient was well on her way to recovery. The pulse was 110, regular and good, blood pressure 140/75, abdomen still distended but less painful and some gas per rectum with fæces. CO_2 42%, creatinine 8 mg. %, Ca 10 mg. %, K 18 mg. %, Na 316 mg. %, non-protein nitrogen 136 mg. %, chlorides 600 mg. %, intravenous fluids 3,175 c.c. including 350 c.c. of blood; urine 800 c.c., vomitus by Cantor tube 875 c.c. The kidneys seemed to be regaining their function and recovery appeared probable.

On January 25, about 11:00 a.m., there was a period of severe agitation in which the patient took out the Cantor tube and Foley retaining catheter. The face was flushed, blood pressure 140/80, pulse 130. She then went into a rather sudden shock-like state with pallor, semi-consciousness, thready pulse and lowered blood pressure to 80/40 within half an hour. This happened as the patient was coming back in her bed from the x-ray department, where a flat plate of the abdomen had been taken. Another vein was immediately cut down on, but the patient went gradually downhill into deep coma, and death followed within two hours. In this last period, nothing would raise her blood pressure; ACTH, Methedrine, Eschatin, and blood were of no avail. The urine output that day had been a mere 145 c.c. On the morning of her death, her hæmoglobin value was 10.4 g., red cell count 3,500,000, hæmatocrit 35%, non-protein nitrogen 118 mg. %, chlorides 525 mg. %, creatinine 4 mg. %, and CO_2 combining power 46%. Permission for autopsy was not granted.

SUMMARY

A case of fatal cyclic vomiting is presented because this condition is never thought of as serious and certainly not fatal. No comment is offered on the rather sudden ending, but acute renal failure was certainly a contributing factor. It is also interesting to note that chlorpromazine may offer some benefit to those suffering from this puzzling ailment.

SPLENECTOMY IN INFANTS AND CHILDREN

A review of 72 splenectomies performed at the Los Angeles Children's Hospital showed good results when the accepted indications are present. In congenital hæmolytic icterus, the ages ranged from 4½ weeks to 14 years, and results were uniformly good in both infants and children; splenectomy is therefore recommended on establishment of the diagnosis. There was no evidence of increased susceptibility to infection or increased mortality. In acquired hæmolytic icterus, ACTH and cortisone may be of great value but the actively bleeding patient who may die if hæmorrhage is not stopped may be saved by an emergency splenectomy. The only good result in Banti's syndrome was in one patient who also had a spleno-renal shunt.

Other doubtful indications for splenectomy are listed; there is no doubt regarding its necessity in traumatic rupture.—L. E. Walter and L. Chaffin, *Ann. Surg.*, 142: 798, 1955.

Special Article

PROBLEMS OF GROUP PRACTICE IN CANADA*

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IT IS BOTH TRITE and true to say that most of us here know from experience the problems peculiar to group practice. We know also that solutions to these problems can be found. This is proven by the groups who have been practising successfully for over 20 years. This last summer I made a questionnaire survey of groups in Canada. The information I obtained forms the basis of this report on the types of groups in Canada and their chief problems.

In the six-year period 1949-1955 there has been a total increase of 60 groups for the whole of Canada (Table I). The greatest increases have been in the provinces of Ontario, Saskatchewan, and Manitoba.

TABLE I.

MEDICAL GROUPS IN CANADA

Province	*1949*	*1955*
British Columbia	28	27
Alberta	35	38
Saskatchewan	21	35
Manitoba	21	34
Ontario	15	37
Quebec	0	5
New Brunswick	4	3
Nova Scotia	1	4
Prince Edward Island	2	3
Newfoundland	0	1
Total	127	187

To date the Canadian Medical Association has made no particular survey of medical groups. The Department of National Health and Welfare at Ottawa conducted the Sixth Survey of Physicians in Canada during 1954 and this was published in April 1955. I have been advised that, from the information obtained, they are making an analysis of group practice. The criteria used by Dr. Richard Weinerman in his study of medical group practice in California—namely, "a systematic association of at least three full-time physicians, more than one specialty of medicine represented, joint use of office facilities and auxiliary personnel, pooling of income and sharing of common overhead expenses with net payments to physicians made according to a pre-arranged plan"—will form the basis of this study. The results will not be available until the spring of 1956.

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*Presented at the Sixth Annual Meeting of the American Association of Medical Clinics, Minneapolis, Minn., November 6, 1955.

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In June of this year 128 questionnaires (Table II) were sent to groups in Canada and 108 replies were received (84.3%). Ninety-five of these replies were classified into three types, A, B, and C (Table III). These types are based, for the purpose of clarity, on the requirements for full and associate membership in the American Association of Medical Clinics:

A: 7 or more full-time doctors, 5 major specialties (2 internal medicine and general surgery).
B: 5 or more full-time doctors, 3 major specialties (2 internal medicine and general surgery).
C: 3 or more full-time doctors.

TABLE II.

QUESTIONNAIRE

1. What is the official name of your group?
2. When did you start gr oup practice? 19.....
3. How many doctors are in your group?
4. How many certified specialists in each specialty?

Internal Medicine	General surgery
Neuropsychiatry	Orthopædics
Pædiatrics	Urology
Dermatology	Obstetrics & Gynæcology
Allergy	Ophthalmology
	Otolaryngology

5. What are your *chief* problems? (Please mention in order of importance.)
   (a) Professional (b) Administrative
6. Are you entirely satisfied with the progress of your group to date?

TABLE III.

Questionnaires sent	128	
Replies received	108	(84.3%)

Classification:

A	*A(p)**	*B*	*B(p)**	*C*	*Others*†
23	4	7	16	44	13

**(p)* indicates potential because some of these groups need only one additional specialist to qualify for the classification. †"Others" indicates groups of less than 3 full-time doctors and replies from these groups were not analyzed.

Groups of single specialties, such as radiology, pathology, anæsthesia, and orthopædics, are not included. The location of the groups is shown in Table IV.

Fifty-five per cent of the A groups have been practising for over 20 years. There are 23 A groups in Canada, and 5 A potential. There are 7 B groups and 16 B potential; 30% of these have been practising for over 20 years. There are 44 C groups and only 6.8% of these have been practising for over 20 years.

Of the 95 replies eligible for classification into types A, B, and C, *21 groups (22%) had no problems.* This leaves 78% of the groups *with* problems, and throughout these vexing problems there runs, like the thread of Ariadne, the *three M's—men, money, and methods!*

TABLE IV.

LOCATION OF CLASSIFIED GROUPS

Province	*A*	*A(p)*	*B*	*B(p)*	*C*
British Columbia	4	1	2	3	8
Alberta	3	1	1	2	13
Saskatchewan	2	—	—	—	1
Manitoba	4	—	1	2	7
Ontario	7	2	1	5	12
Quebec	1	—	1	1	1
New Brunswick	1	—	—	1	—
Nova Scotia	—	1	1	1	1
Prince Edward Island	1	—	—	—	1
Newfoundland	—	—	—	1	—
Total	23	5	7	16	44

The largest single problem, stated in 33.6% of the replies, is difficulty in securing and holding qualified doctors willing to adjust themselves to group practice.

There are over twice as many A groups with this problem as B or C groups, which is perhaps understandable because of the larger staff. One cannot help wondering whether there is available a senior member of the professional staff who by training and temperament knows how to deal with doctors, by sitting down quietly and listening to the complaint and then doing something about it. Initial selection, indoctrination, a probation period before permanent acceptance, retirement plans, sickness and disability and group insurance, adequate vacations and time off for postgraduate training may all be necessary to appeal to the desirable kind of doctors, the kind who stay and like it. However, we must remember that despite excellent qualifications some doctors, by their nature and prejudices, present a psychological resistance to group practice.

The additional problems relating to doctors are: discrepancy in work volume among various members of the staff (12.6%); incompatibility (13.3%); lack of time for postgraduate training (8.4%); and objections to house calls (5.2%).

The second largest problem, mentioned in 21% of the replies, is *difficulty in securing competent non-medical personnel.* This problem is almost equally divided among the three groups A, B, and C.

Equitable distribution of income is a problem in 22% of groups and is almost equally divided among the three types. The fourth most frequently mentioned problem (20%) is low level of fees for prepayment plans and insurance examinations. Twice as many C groups as A groups listed this problem. High overhead costs are complained of by 18.9%. Collection difficulties are a problem in 11.5% of groups and equally divided among types. Lack of a plan to retire older doctors is a problem in 4% of groups, the majority being A groups. The same percentage have trouble with specialists neglecting to record charges. One B group com-

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plains of the encroachment of government treatment centres for cancer and other diseases.

The Executive Director of the American Association of Medical Clinics, Dr. Edwin P. Jordan, stated in a recent article that ". . . the most important problem in the successful operation of a group is the establishment of an equitable and reasonably satisfactory method for the division of the net professional earnings." It is probably good news and indicative of its solution by many groups that this problem is in third place in replies from Canadian groups.

A total of 17.8% of all groups (equally divided as regards type of group) have problems relating to location. Their difficulties include lack of office and parking space, distance from laboratory services, distance from large hospitals and consequent lack of hospital beds and lack of interns.

The majority of problems regarding patients (11.5%) are mentioned by A groups. They include lack of parking space for patients, difficulty in reducing waiting time for patients, and difficulty in referring patients to other specialists to the satisfaction of both patient and doctor.

Of the 95 groups analyzed, 48% have been in practice less than 10 years. The majority of these are C groups. One of the primary objectives of the American Association of Medical Clinics is to help small groups function successfully; perhaps we should reach out a helping hand a little further and a little faster to those groups whose problems are not too difficult to solve.

This survey indicates that the information on group practice which has been collected by our Association, and the conclusions derived therefrom, may render a valuable service to our medical colleagues in Canada as well as in the United States.

SUMMARY

1. According to figures given by the medical registrars of each province for surveys conducted by the author in 1949 and in 1955, there has been an increase of 60 groups practising in Canada during the past six years.

2. Of the 95 groups analyzed for this study 78% have problems. The three problems most frequently mentioned, in order of importance are: difficulty in securing and holding qualified doctors willing to adjust themselves to group practice, difficulty in securing competent non-medical personnel, and equitable distribution of income.

3. Forty-eight per cent of the 95 groups analyzed have been in practice less than 10 years; the majority of these are C type groups.

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Clinical and Laboratory Notes

DIETARY FAT, ESSENTIAL FATTY ACIDS AND CORONARY HEART DISEASE: RECENT ADVANCES AND A SUGGESTED PLAN FOR RESEARCH

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MANN AND ASSOCIATES, of Harvard and the Federal Medical Department, Nigeria,[1] working on sera of Nigerians, have found their serum lipoproteins to be only slightly lower than those of an age-and-weight-watched group of United States citizens. But the total serum cholesterol levels of the Americans were considerably and statistically significantly higher than those of the Nigerians.

The three Nigerian groups were found to consume diets of low protein and animal fat content. Two of the Nigerian groups consumed red palm oil, a vegetable oil.

These workers interpret their data as supporting an hypothesis which relates muscle mass and magnitude of energy expenditure to the control of the serum lipid levels.

Bronte-Stewart and associates of the Cape Town Medical School,[2] in four cases on an isocaloric and isonitrogenous diet, found that animal fats, in the form of beef dripping, butter, meat and eggs, led to a prompt rise in the serum cholesterol level. No such effect was produced by feeding vegetable oils, such as ground-nut oil and olive oil. An important finding was that hydrogenated ground-nut fat behaved differently from non-hydrogenated oil. It is suggested by these workers that the level of cholesterol is determined by the essential fatty acids, such as linoleic, linolenic and arachidonic acids. They used sunflower-seed oil, with a high linoleic acid content, on an individual whose serum cholesterol had been elevated by prior cholesterin feeding. Despite continued consumption of cholesterin, a prompt fall in the serum cholesterol followed the addition of sunflower-seed oil to the diet. This promising line of research is being continued in Cape Town.

It is interesting that Kramár and Levine[3] found that linoleate and cottonseed oil prevented the development of capillary fragility in rats, while Alfin-Slater and co-workers,[4] also from experiments on rats, concluded that essential fatty acids are necessary for the efficient transport and metabolism of cholesterol.

Whereas the essential fatty acids are found mainly in various seed oils, many of these oils also contain large amounts of tocopherol (vita-

min E). For instance, while eggs contain 2.00 mg. of tocopherol per 100 g. of fresh material, soyabean oil contains 140 mg.; cottonseed oil, 90 mg.; corn oil, 87 mg.; margarine, 54 mg.; and peanut oil 22 mg. (Harris *et al.*[5]).

We know that the tocopherols (alpha, beta, gamma and delta) are antioxidants, which preserve easily oxidizable vitamins and unsaturated fatty acids in foods, mixtures, or the body (Harris and Kujawski[6]). It would, therefore, be a legitimate question to ask whether the cholesterol was lowered by the essential fatty acids or by the tocopherols in the Cape Town experiments. We wonder whether the tocopherols were not destroyed in the process of hydrogenation of the oils.

Furthermore, Evans and Burr[7] demonstrated that wheat germ, the highest and least varying source of vitamin E, can be robbed of its effectiveness when mixed with high amounts of certain fats, such as lard, composed largely of saturated fatty acids.

In terms of the above discussion it would appear that the following situations in regard to blood cholesterol should be tested:

1. The effect of exercise per se.
2. The effect of essential fatty acids.
3. The effect of the tocopherols.
4. The effect of saturated fats and tocopherols.
5. The effect of vitamin A on the tocopherols.

The latter situation should be tested because red palm oil contains substantial amounts of vitamin A (Platt[8]), and also the vitamin A content of the livers of vitamin E deficient rats is much lower than expected (Moore[9]).

Atherosclerosis and coronary heart disease being conditions occurring commonly in man, a series of human experiments could be carried out to study the physiology of cholesterol metabolism in terms of our present discussion. Physiological variation may teach a great deal about pathology. Furthermore, the subjects being studied should act as their own controls under different dietary situations. The experimental group, initially, should be males, as they are most commonly affected by atherosclerosis and coronary heart disease (Barr,[10] Russ *et al.*[11]). Such young adult males could be studied in North America, Africa, India and South America. In the United States, Mayer *et al.*[14] and Hardinge and Stare[15] have described dietary studies of this nature on apparently healthy males. But such work should be greatly extended.

In the Canadian situation, a suitable group would be about 30 volunteer male medical students initially studied in terms of a full medical and dietetic history, complete physical examination, and blood chemistry with special reference to total cholesterol, cholesterol in Cohn's Fraction I + II and III, (beta lipoprotein) (Cohn *et al.*[12]) and in Cohn's Fraction IV + V + VI (alpha lipoprotein) and also in terms of Gofman's Sf 10-20 lipoproteins (Gofman *et al.*[13]). In addition they should also be studied in regard to thrombin levels and sex hormone excretion, if possible. A series of liver function tests might also be indicated.

The basic diet should be as stated in "Canada's Food Rules", i.e. a good balanced daily food intake, of which the proximate composition should be known as accurately as possible. Ideally it should be of such a nature that each part of it would represent the composition of the whole daily intake. But one cannot picture young men munching standard food cubes, like the lowly laboratory rat. After one month the various chemical observations should be made. During the following month the group should be on the same diet, but subjected to daily measurable exercise. During the next month, on as far as possible an isocaloric and isonitrogenous diet and with the same proportions of minerals and vitamins as in the basic diet, the new diet should be varied by reducing fats of animal origin and supplementing them with a vegetable oil containing a high proportion of essential fatty acids but with no additional tocopherols. This would be repeated with exercise for an additional month.

What would follow would be a similar diet including essential fatty acids and tocopherols. The changes could be rung, varying one dietary item at a time, with and without exercise, until the volunteers have had enough of the project.

By using the same subjects, acting as their own controls, a mass of essential basic physiological data could be built up on the metabolism of cholesterol and the lipoproteins, which may throw a great deal of light on this pressing problem of coronary disease. A similar series of experiments could be planned in young adult females.

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April 15, 1956, vol. 74

The Canadian Medical Association Journal

published twice a month by
THE CANADIAN MEDICAL ASSOCIATION
Editor: S. S. B. GILDER, T.D., M.B., B.Sc.
Managing Editor: T. C. ROUTLEY, M.D., F.R.C.P.[C.]
Consultant Editor: H. E. MACDERMOT, M.D., F.R.C.P.[C.]
Editorial Offices: 150 ST. GEORGE ST., TORONTO
(Information regarding contributions and advertising will be found on the second page following the reading material.)

THE PREVENTION OF SEQUELÆ OF STREPTOCOCCAL INFECTIONS

It has long been known that the incidence of rheumatic fever and acute glomerulonephritis is causally related to the concurrent or recent presence of hæmolytic streptococci within the body, and that the usual location of these organisms is in the throat. This knowledge has been utilized with a certain measure of success in the prevention of *recurrence* of rheumatic fever by chemo-antibiotic prophylaxis. Very little has been published, however, in connection with the prevention of first-attack rheumatic fever or of acute glomerulonephritis by these methods. It would now appear that this situation has recently been receiving a great deal of attention. Catanzaro and others[1] have drawn rather interesting conclusions as to the required time-relationships between the presence of streptococci within the throat and the development of rheumatic fever, as well as the effects of penicillin and sulfonamides in reducing the attack rate. Their information indicates that the development of rheumatic fever requires the presence of living streptococci in the throat *throughout the period of convalescence* and suggests that, in this situation, a form of hypersensitivity of the tuberculin or "delayed" type is involved. Stollerman[2] has called attention to the necessity of early and accurate recognition of streptococcal pharyngitis, and its distinction from upper respiratory infections of viral origin. He suggests that the incidence and morbidity of rheumatic fever can be reduced significantly by appreciation on the part of physicians and the general public of the importance of early diagnosis and proper treatment of streptococcal disease, and upon diligent protection of rheumatic subjects from streptococcal infection. In his opinion, shared of course by others, there are two effective approaches to the prevention of rheumatic fever by the use of antibiotics. The first is protection of the highly susceptible rheumatic subject from repeated attacks of the disease by maintaining continuous chemoprophylaxis against new streptococcal infections. The second is prompt and adequate treatment of streptococcal pharyngitis in the general population to reduce the incidence of first attacks of rheumatic fever. Penicillin, according to this writer and others, appears to be the drug of choice for prophylaxis or therapy; and, for continuous prophylaxis, 200,000 to 250,000 units of oral penicillin daily, 1,200,000 units of benzathine penicillin intramuscularly once monthly, or 1 g. of sulfadiazine daily is recommended.

Hubbard[3] has recently indicated that, in private practice, the skilful physician can often recognize streptococcal infections clinically on the basis of characteristic symptoms and signs; and he has suggested that, in such patients, penicillin therapy may be started without waiting for bacteriological confirmation. In a symposium on preventive medicine, presented at the 36th Annual Session of the American College of Physicians in April of last year, Dingle[4] had this to say: "There are at the present time no procedures or drugs by which respiratory illnesses caused by viruses can be controlled through attempts to eradicate the causative agents. It is possible, however, to eradicate group A streptococci from both cases and carriers by the use of penicillin. . . . Penicillin in therapeutic doses should therefore be used in the treatment of group A streptococcal infection in the home, not only to prevent the occurrence of complications such as rheumatic fever or acute glomerulonephritis, but also to eradicate the organism and reduce the possibility of spread to other members of the family. When a case of rheumatic fever or glomerulonephritis occurs in a household, cultures of the throat should be obtained from other members of the family, and those having group A streptococci should be treated with penicillin."

Since the introduction of antibiotics and chemotherapeutic agents to clinical medicine, physicians have repeatedly been cautioned, and rightly so, that these agents have toxic and allergic propensities, and should not be used lightly or indiscriminately. The statements that follow should not, and must not, be interpreted as an invitation to disregard these wise and valuable precautions. Nevertheless, what seems to be evolving from these and other authoritative writings is that we have at hand certain potent and readily available agents whose judicious use may prevent or minimize the tragic consequences of rheumatic heart disease and chronic glomerulonephritis. The consensus seems to be that, although we should not relax our vigilance against the thoughtless and indiscriminate use of antimicrobial agents, steps can be taken toward the prevention of dangerous sequelæ of streptococcal infections by the judicious use of

appropriate chemo-antibiotic agents *in the early stages* of these infections. It seems also to be agreed that, where precious time would be lost and irreparable damage done by waiting for bacteriological confirmation, the use of chemo-antibiotic prophylaxis without such confirmation may be sanctioned *if* the clinical findings are strongly suggestive.

The situation as to the prophylaxis of acute nephritis is not so clearly defined; and efforts to prevent first-attack acute glomerulonephritis by the use of antibiotic agents have not been uniformly successful. However, Rammelkamp[5] has suggested that it is advisable to place all patients with chronic nephritis on a prophylactic regimen of oral or benzathine penicillin, in the hope that acute exacerbations may be prevented; and it does not appear to be too much to hope that future investigation of this problem may lead to suggestions that will decrease the incidence of first attacks of acute nephritis following infections with group A streptococci.

In the meantime, while it should remain axiomatic that the indiscriminate use of antibiotics is to be avoided, the judicious use of these agents to prevent complications and sequelæ of streptococcal infections is the right, and in fact, the duty of the wise physician, particularly where there are adequate clinical indications for such use. This places a heavy burden of responsibility on the shoulders of the practising physician. However, it is on these shoulders that the responsibility has always belonged; and it is possible that this situation may have a salutary effect in restoring to the physician that position of authority which he has, to some extent, lost since the introduction of antibiotics and chemotherapeutic agents to clinical medicine. S.J.S.

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Editorial Comments

MEDICAL EDUCATION

A sub-committee convened by the Medical Association of South Africa has just issued an interim report on medical education. Its criticisms are not directed only to South African medical schools but are also based on a study of literature from many parts of the world. The clearest thing which emerges from the report is the extremely complex and difficult nature of the problems involved in arranging an undergraduate curriculum. The committee agrees with informed opinion from all parts of the civilized world that the present medical curricula are unsatisfactory. The main faults appear to be: (a) Overcrowding of the timetable, which has an inhibiting effect on the mind of the student and leaves no time for thought. (b) Training in fragments of specialties by specialist teachers whose courses are not co-ordinated. (c) Administration of teaching in terms of separate subjects. The subjects are taught and finished with by "stop" examinations. The implication for the student is that having passed a "stop" examination, he may drop the subject with a sigh of relief. (d) Inadequate training in important aspects of general practice. (e) Inadequate and inappropriate training in psychiatry. (f) Emphasis on knowledge, detail and memory, rather than on general principles and a logical approach to problems. (g) The attitude of the teaching and nursing staff to students. The committee considers that the student is too often treated as a humble spectator privileged to see a great specialist in action or to record his words of wisdom. Attentive admiration and silent compliance have in the past been the hallmarks of the model student. The cold contempt of the graduate nursing staff towards medical students also comes in for criticism.

Summarizing their feelings about the present curriculum, the committee says that the general result is the production of a badly over-stuffed animal in whom the teachers have little confidence and who has even less in himself. There is a pious hope that these manifest defects will be corrected during the year of internship.

The committee goes on to consider what should be done to solve these problems. It quotes Professor Guy Elliott, who says, after years of intensive study, "there is no answer to this problem". This means that the problem is not susceptible of easy solution by thought, but must be "lived out". The committee also points out that the needs of one area may differ widely from those of another, and that no standard curriculum can be enforced throughout the world. It is also essential that a curriculum be flexible and susceptible of change to meet the needs of the time. However, the committee suggests in the first place simplification of the curriculum by teaching and emphasizing general principles of science and ruthlessly pruning the factual type of teaching. Secondly, subjects must be co-ordinated and integrated. For example, after the student has passed his examinations in physiology he should still be taught further by the physiologist in co-operation with physicians, surgeons and pathologists. The committee advocates training in certain aspects of general practice by and with general practitioners; it also advocates psychiatric training in the general hospital, with due emphasis on psychosomatic medicine. Students must be trained in observation

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and deductive reasoning, in recognizing and defining problems, in the use of the library, and in lucidity of communication. Every medical student should be treated with respect and consideration due from senior members of an honourable profession to younger colleagues. Ridicule, scorn and contempt towards the student are unjustifiable.

The committee is aware that there is bound to be resistance to change. Resistance may come from shortage of money. It is cheaper for a lecturer or professor to deal with a passive class of anything up to one hundred students than to take study groups of four to six students and train them in observation, inference and exposition. Another source of resistance is of course the attitude and feelings of the teaching staff, some of whom may view with suspicion and even with hostility any suggestion of change.

The committee feels in general that the aim of training in a medical school should be not to produce a general practitioner but a "basic doctor", well trained in the basic principles of the medical sciences, taught the art of observation and reasoning, taught how to recognize and define problems and communicate problems to others and taught to use the literature. With a basic training at graduation, the student could then turn to any branch of medicine, including general practice. Finally the committee, deeply impressed by the magnitude and difficulty of the whole problem, gives as its opinion that a solution will take generations of experience.

GERMAN MEDICAL JOURNAL IN ENGLISH

The enterprise of the German race seems unlimited. The latest example is furnished by the appearance of an English-language edition of the famous *Deutsche med. Wochenschrift*, which is to appear monthly as the *German Medical Journal*, and will contain in addition to the translated articles from the mother periodical a series of items from other sources designed to bridge the still considerable gap between German and Anglo-Saxon medical literature. The first number is admirable and the standard of translation high. It opens with the translations of the three papers on the new antidiabetic drug BZ 55 already commented on in our editorial columns. Other articles deal with palliative surgery in stomach cancer, hæmorrhagic fever, the effect of treatment on life expectancy in hypertension, and fractures in childhood. There are reviews, editorials, questions and answers, abstracts from German literature, and a valuable account of the Medical Faculty at Heidelberg. It is to be hoped that this new venture receives the support it deserves.

SCOTTISH MEDICAL JOURNAL

Out of the ashes of the *Edinburgh Medical Journal*, which started in 1805 and became extinct last year, and the *Glasgow Medical Journal* which has a 128-year history of publication, there arises the new *Scottish Medical Journal*. The policy of its editorial board is ultimately to produce a clinical journal of international status. If the journal receives sufficient support from the medical teaching centres of Scotland, there is no reason why this laudable ambition should not be achieved. The first number is an attractive and beautifully produced periodical. Pride of place among the original articles in the first issue is given to a paper by Drs. Gilchrist and Tulloch on anticoagulant therapy in myocardial infarction, a subject on which Dr. Gilchrist addressed the Canadian Heart Association last June. Of the other original articles, the most significant is a histochemical study of adrenal glands removed from patients at autopsy or operation. The relationship of the adrenal cortex to ribonucleic acid, referred to in this paper, is further discussed in an annotation. The many Canadians with Scottish affiliations will join us in wishing success to our new contemporary.

COSTS OF THE BRITISH NATIONAL HEALTH SERVICE

Like Gaul in the days of Julius Caesar, the British National Health Service is divided into three parts: the Hospital Service, including all hospitals, specialists and management committees; the Executive Councils, which include administration, general practitioner, dental, pharmaceutical and ophthalmic services; and the Local Authority Service, which comprises preventive services for mothers and children, immunizations, domiciliary midwifery, home nursing, health visitors, health centres, domestic help services, mental care and ambulance service.

Since its inception, the National Health Service has been widely discussed in many places, both in private and in public. Some of the discussions generated light, while too many merely dissipated heat. The recent report by Brian Abel-Smith and R. M. Titmuss[1] on the costs of the service has shed much light on this controversial aspect of the situation.

Like the sound economists they are, these workers did not merely study costs in terms of expenditures. They related costs to standard monetary values, and they also related expenditures to the gross national product, the generally accepted measure of total national resources. Their findings are illuminating. In

1949-50, when the gross national product (£m. in actual prices) was 9,907, the net cost to public funds of the National Health Service was 371.6, and the net cost as a percentage of the gross national product was 3.75. For 1950-51 the figures are 10,539, 390.5 and 3.71; for 1951-52, 11,560, 402.1 and 3.48; for 1952-53, 12,487, 416.9 and 3.34; and for 1953-54, 13,273, 430.3 and 3.24.

From this it is clear that, relative to total national productivity, the costs have been decreasing since 1949-50.

With the purchasing power of money expressed in terms of 1948-49 prices, the gross cost of the National Health Service rose by £32 million between 1949-50 and 1953-54. The dominating changes have been due to an increase of £25 million in wages and salaries, an increase of £24 million in drugs and medical supplies, and a decrease of £20 million on dentures and spectacles. It is estimated that 7 million dentures and 26.1 million pairs of spectacles have been supplied in England and Wales since the inception of the National Health Service.

The current net per capita costs of the National Health Service in England and Wales from 1948-9 to 1953-4, in terms of 1948-9 prices, were estimated as follows: 1948-9, £7.13s; 1949-50, £8.13s; 1950-1, £8.19s; 1951-2, £8.13s; 1952-3, £8.11s; 1953-4, £8.15s.

In these net costs population increases are taken into consideration.

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A NEW TRANQUILLIZER

Danish physicians have recently published studies of a new tranquillizing and relaxing agent, called Suavitil or benactyzine (the hydrochloride of 2-diethylaminoethyl benzylate). This substance, whose pharmacology was worked out over 15 years ago, is an anticholinergic and local anæsthetic of low toxicity. It has been extensively used in Denmark on psychoneurotic patients, and Jensen[1] describes its application in 110 cases, treated concomitantly with 110 controls. Most of these patients were suffering from depression, asthenia, obsessional reactions, or anxiety state. Results of treatment with benactyzine were encouraging; 51% lost their symptoms and another 17% most of their symptoms. Depression and anxiety state responded best. The dose given was 0.5 mg. three times a day by mouth. At this level no serious side-effects were noted, though a few patients complained of dizziness and a sensation of depersonalization. Improvement set in within a few days, patients becoming more sociable and outgoing, a change favouring psychotherapy.

The valuable therapeutic effects of benactyzine have even more recently been confirmed by physicians in Cambridge, England.[2] They treated 110 patients, 74 of whom were outpatients, while the other 36 were in a mental hospital. Diagnoses ranged from schizophrenia and endogenous depression to anxiety neuroses, drug addiction and psychosomatic complaints. There appeared to be some improvement in roughly three-quarters of all cases, but in only 11% of the series did the main symptoms disappear continuously for several months. Analysis of the series suggests that treated patients may be divided into two classes by their reactions to benactyzine, irrespective of the diagnosis. Those who consciously or unconsciously want help appear to benefit, provided they have definite symptoms or signs of anxiety or agitation; on the other hand, hostile patients did badly. Patients given benactyzine tended to be forgetful and felt soothed. The drug was suitable for use with other sedatives, such as phenobarbitone, but some doubt is expressed about its suitability for indiscriminate use.

Because benactyzine is also a physical relaxant, shown to reduce tension, Coady and Jewesbury[3] studied its action on 80 outpatients attending hospitals in southern England. They chose a mixed collection of patients with neurological disorders (multiple sclerosis, facial tic, parkinsonism, facial pain, writer's cramp and other muscle spastic conditions). Unfortunately results in these cases were disappointing. A two-week course of 2 mg. benactyzine three times a day by mouth did not affect muscle tone or relieve symptoms due to spasm or rigidity. As usual a fair proportion of patients said they were better, but equivalent figures were obtained with a placebo. The only indirect effect which seems to be worth further investigation is the abolition of flexor spasms at night.

Several healthy medical observers tried doses of the drug from 2 to 15 mg. and noted that above a 6 mg. level they had increasing difficulty in concentrating, following a train of thought, or carrying out complicated actions. The authors warn because of this that benactyzine should not be used by patients driving automobiles.

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MEDICAL NEWS *in brief*

ANTIBIOTICS AND TETANUS

From *in vitro* and *in vivo* studies, two workers from Johns Hopkins University conclude that penicillin and the tetracycline groups of antibiotics have a bactericidal action on *Clostridium tetani*. Since tetanus antitoxin may give only temporary protection against the toxin produced by multiplying tetanus organisms, they think it rational to give terramycin or penicillin in appropriate doses, rather than tetanus antitoxin, in the attempted prophylaxis of tetanus. They also think it rational to administer one of these antibiotics in addition to antitoxin in cases of clinical tetanus.—ANWAR, A. A. AND TURNER, T. B.: *Bull. Johns Hopkins Hosp.*, 98: 85, 1956.

STUBBORN URINARY INFECTIONS

Dr. Herrold and his colleagues from Chicago report encouraging results in treatment of chronic infections of the bladder and upper urinary tract with the use of the new antibiotic cycloserine. They gave 0.5-1 g. per day orally and had a high proportion of successes except in gonococcal infection. Even chronic prostatitis responded. Toxic signs were few, and the authors recommended cycloserine in such infections.—*Antibiotic Medicine*, 1: 665, 1955.

CHRONIC PROSTATITIS—FACT OR FICTION?

A group of physicians working at a U.S. Army hospital question the widespread belief that chronic prostatitis causes a wide variety of symptoms ranging from mental trouble to pain and sterility. They studied prostatic fluid from 311 healthy men, 449 men with a diagnosis of prostatitis made on the finding of white cells in prostatic fluid, and 155 men alleged to have "non-specific urethritis". They found that the prostatic fluid in all three groups might contain similar quantities of white cells, and that findings at weekly intervals were liable to vary greatly. They think that the concept of chronic prostatitis as the cause of symptoms is often a fiction.—O'SHAUGHNESSY, E. J., PARRIRO, P. S. AND WHITE, J. D.: *J. A. M. A.*, 160, 540, 1956.

SUBARACHNOID HAEMORRHAGE

A recent publication by Logue (*Brit. M. J.*, 1: 473, 1956) based on a report given in Toronto in June 1955 describes his operative treatment of spontaneous subarachnoid hæmorrhage. He occludes the anterior cerebral artery responsible by a clip applied just after its origin from the internal carotid. The idea is to cut down the pulse pressure in the aneurysmal sac responsible for the bleeding. In selected patients his operation lowered mortality greatly. Of 36 patients treated conservatively, only 20 survived and four of these had a severe and persistent disability. Of 37 patients operated on, 30 survived. Logue thinks that his operation has a good deal to offer to patients with acute subarachnoid hæmorrhage and under the age of 60.

THROMBOSIS AND OBSCURE CARCINOMA

Two Chicago physicians summarize the case histories of 10 patients who had a migrating thrombosis and in whom obscure carcinoma was discovered. In two cases the carcinoma was in the pancreas, in four in the lung. The episodes of thrombosis lasted from between two weeks and four months before the carcinoma was diagnosed or at last declared itself. The authors suggest that puzzling cases of migrating thrombophlebitis should be thoroughly investigated for hidden carcinoma. They note that anticoagulant therapy did not prevent progress of the thrombosis in these cases.—PERLOW, S. AND DANIELS, J. L.: *Arch. Int. Med.*, 97: 184, 1956.

SOME INDICATIONS FOR TETRACYCLINE

A one-year study of tetracycline therapy in Paris has confirmed the advantages of this antibiotic in acute respiratory infections and staphylococcal infections and has also suggested some other uses. The authors are impressed with its value in brucellosis, amœbiasis and the orchitis of mumps. They gave 16 patients with mumps orchitis 2 g. of tetracycline daily for four or five days. Pain was quickly suppressed, the swelling reduced and fever settled. Results were much better than in a control series of 20 given œstrogens.—DARBON, A. AND GIRIER, L.: *Presse méd.*, 64: 202, 1956.

PALLIATIVE OPERATION IN STOMACH CANCER

Eckmann of Basel, Switzerland, makes a strong plea in a recent article for palliative resection of the stomach even in apparently inoperable cases of gastric carcinoma. He has followed up a series of 51 cases operated on in his clinic between 1949 and 1953, although in each case there was evidence that the whole growth had not been removed. In spite of this gloomy outlook, six have survived for five years and 14 are still alive two-and-a-half to six years after resection. He believes that removing most of the carcinoma may enable the patient to deal with the rest.—*Deutsche med. Wchnschr.*, 81: 188, 1956.

LOW FAT DIET AND GALLBLADDER DISEASE

Dr. Morrison of Los Angeles has observed 100 patients over a 10-year period on a low-fat and low-cholesterol diet, and compared them with 100 patients on a typical American diet. He finds the incidence of gallbladder disease or symptoms to be almost nil in those on a low-fat diet and eight times greater in those on a full diet. He therefore suggests that persons with gallstones or those who have undergone operations on the biliary tract should remain on a low-fat diet.—MORRISON, M. J.: *Am. J. Gastroenterol.*, 25: 158, 1956.

NEW SYNTHETIC HORMONE

A new synthetic hormone, said to be three times as potent as aldosterone, has been prepared in the laboratories of the Upjohn Company in Michigan. This substance, a methyl derivative of fluorohydrocortisone acetate, stimulates salt retention to a greater degree than any other hormones at present known. It is 40 times as powerful as hydrocortisone as regards ability to influence glycogen deposition. It has no known usefulness in human therapy as yet.

SIMULATION OF SCIATICA

Dr. Scott of Philadelphia produces evidence suggesting that a sharp shooting or burning pain in the leg simulating sciatica may occasionally be an early symptom of tumour in the thoracic or cervical spinal cord. He has studied six cases, all in women over 50; in one case the correct diagnosis was not made for 16 years. Such cases require myelography of the entire cord area.—*J. A. M. A.*, 160: 528, 1956.

GIVING UP SMOKING

Since the discussions on a relationship between lung cancer and smoking, patients who have smoked for years sometimes ask what the effect of giving up smoking will be on their life expectancy. In other words, is the damage done and should they therefore continue to smoke, or is it a case of "never too late to mend"?

The English observers, Bradford Hill and Doll, have studied 40,000 men and women doctors who provided information about their smoking habits at the end of 1951. Their results suggest that those smokers who ceased smoking by the end of 1951 are dying of lung cancer at a lower rate than those who continue to smoke. A similar result is indicated by evidence from the United States. It is therefore reasonable to hope that the smoker who gives up his habit substantially reduces the risk of developing lung cancer.—*Brit. M. J.*, 1: 504, 1956.

CONTROL OF AN EPIDEMIC IN THE NEWBORN

In February 1955 an outbreak of acute infective enteritis of the newborn occurred at the Royal Women's Hospital, Melbourne, Australia. The causal organism was *Salmonella typhi-murium*, which was found in the stools of 23 babies. The clinical course of the outbreak was mild and brief; whether this was due to the use of terramycin or not is doubtful. In reporting the outbreak, Drs. Forster and Laver (*Med. J. Australia*, 1: 57, 1956) are chiefly concerned with drawing attention to the value of rooming-in as a control measure. After the epidemic had continued for three days, it was decided to make the mother responsible for handling the baby day and night. This rule obviously could not be applied to prematures and certain others. By the sixth day the epidemic had completely ceased. In five out of six late cases of infection, rooming-in had not been possible; all five babies were being cared for in a nursery. The authors are convinced of the value of rooming-in, and also mention a great reduction in the incidence of minor skin and eye infections in the hospital during the four weeks in which complete maternal care of the baby was strictly enforced.

FLUORIDATION IN BRANTFORD

Brantford, Ontario, completed ten years of water fluoridation on June 20, 1955. The third and last report of local studies made in this city is published in the *Canadian Journal of Public Health* for March 1956. Altogether 12 annual dental surveys have been made on Brantford schoolchildren. The authors of the present report state that ten years' study of fluoridation in the U.S.A. and Canada has proved its safety as a public health procedure beyond question. Their experience with the use of sodium fluoride, and for a short period sodium silicofluoride, has clearly shown that its addition to a water supply is simple and easily controlled. Whereas in 1944 before fluoridation only 5.18% of Brantford schoolchildren had teeth free from decay, this figure had steadily risen to reach a peak of 21.83% in 1955. The percentage reduction of dental caries experience, based on the decayed, missing and filled formula, was 53.9% for permanent teeth, compared with pre-fluoridation rates.

SODIUM GLUTAMATE AND HEPATIC COMA

On theoretical grounds, sodium glutamate has been tried out in treatment of hepatic coma. Both encouraging and discouraging results have been reported. Webster and Davidson (*J. Clin. Invest.*, 35: 191, 1956) have studied this therapy in 11 cases of cirrhosis of the liver, giving the drug in doses of 23 g. intravenously daily. It failed to affect the course of coma favourably. Much larger quantities intravenously gave some temporary benefit.

PENICILLIN V

Dr. Welch summarizes recent knowledge on penicillin V, including discussion at the November 1955 symposium. He particularly stresses the inherent stability of the penicillin V acid. Because this preparation is resistant to acid, it is ideal for oral use; it can also be administered without regard to meals. It is unique in giving blood concentrations after oral administration which are comparable with those obtained after intramuscular injection of the same dose of penicillin G. Its antimicrobial activity and toxicity are comparable to those of other penicillin compounds. It may or may not produce allergic reactions in those sensitive to other penicillins.—*Antibiotic Medicine*, 2: 33, 1956.

(Continued on page 41 of advertising section)

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PUBLIC RELATIONS FORUM

Conducted by L. W. HOLMES
Assistant Secretary, C.M.A.

XV. DOCTORS ON CAMERA

TELEVISION, the infant of mass communications in Canada is rapidly growing into a strong and sturdy industry capable of amazing impact on those exposed to its wonders. A study by the United States Navy several years ago indicated that television is a teaching medium with considerable force and one which promotes excellent retentiveness.

Organized medicine in the United States has long used TV in health education. At least one of the medical shows produced there is carried on Canadian television networks. There are such productions as "Medic", "March of Medicine", "Horizons", and "The Johns Hopkins Science Review". These claim viewers numbered in the millions. There are others less well known. Some cover segments of networks, some cover only the radiation area of a single station.

Types of shows range from extravagant, multi-camera dramatizations and documentaries using the most elaborate of props and settings where cost seems of little import, to the individual doctor sitting in a single-camera, unadorned studio, armed with chalk, blackboard, and perhaps a couple of pictures. But big or small, these productions take health education to viewers avid for entertainment and an easy-to-swallow pill of knowledge.

Here in Canada the physician's venture into television has been limited and sporadic. It is believed that the Wingham (Ontario) and District Medical Society is the only group at present producing a medical TV series. A somewhat similar series is being planned by doctors in Sudbury. Beyond this, the British Columbia Division of the Canadian Medical Association has recently assisted the Canadian Broadcasting Corporation in Vancouver in the production of an hour-long kinescope (a television program recorded on film). It is known that physicians elsewhere have made isolated appearances on television.

To be effective, however, organized medicine's use of TV as a medium of health education and concomitant improved public relations must be determined, organized and extensive.

Perhaps the medical society considering the use of television in its public relations program would be wise to establish a special television committee, or a sub-committee of the PR Committee whose duties would include television. The essential duties of such a committee or sub-committee might include:

1. Selection of suitable topics.
2. Selection of suitable program format.
3. Selection of specialized medical authorities to act as resource persons on each script, or to appear as guests.
4. Official invitations to these persons.
5. Provision of basic medical material on each program to the script writer, and instruction to the writer as to the approach desired.
6. Script checking and approval.
7. Assistance to the television station in securing items needed as props—such as x-rays, slides, anatomical charts and models, medical film clips, and so forth.
8. Supplying counsel to the director in studio on such matters as the proper set-up of an operating room, handling of medical tools, and similar procedures which may be called for in the course of production.
9. Acting as liaison between the TV station and the society.
10. Giving the station and the television project the benefit of the best possible publicity and promotion.

Much of what was said in the preceding article on radio applies to television: getting the program on the air, medical ethics as they apply to participants, one show versus the series, promotion. However, in television, more so than in radio, special attention must be given to program content and format.

Television is a unique visual medium, not just visual radio. The approach, then, must be different. Programs must be planned to use vision to its best advantage. This requires of the planner choice of subject which lends itself to visual illustrations and consideration of how it may be best illustrated. Imagination, combined with knowledge of the limitations of the television camera, is the best equipment the planner can use in deciding the possibilities of subject visualization. Every doctor's office is well equipped with suitable props for many common topics. The television camera will satisfactorily reproduce charts and textbook pictures which may be used to illustrate a program. Cut-away models are frequently available. The resources of a medical school will appear almost limitless when one is seeking visual aids. One admonition: television cameras in most stations—certainly in all Canadian stations—reduce all colours to black, white and the greys between.

Probably the best program formats for the medical society to consider are the talk, the interview and the round-table. All are used with success both by the networks and individual stations. The documentary and dramatization are difficult, time-consuming and expensive.

The society contemplating the use of television should be warned that it can be a time-consuming medium no matter what format is used. Unlike radio programs most television productions must be exhaustively rehearsed and camera movements carefully planned. But the finished product yields considerable satisfaction in the knowledge that the participant has been

able to take his message to the viewer's living room in a manner just short of a personal visit. The educational impact of this is similarly almost as strong as that of the personal conversation.

The public relations value cannot be overemphasized. Where on radio the doctor is a disembodied voice, he is, on television, a real person, a human being with obvious idiosyncrasies and habits of movement to which the viewers can warm. Humanizing the doctor can be a most effective public relations activity.

The voracious appetite which television has for time, particularly in rehearsal, is referred to above. Because of this, the Canadian Medical Association has available a series of prepared scripts for 15-minute programs. To eliminate the search for props for these programs, a film is provided with each script. The doctor need not memorize the script content; he can read it as he faces the camera. From time to time the script is illustrated by sections of the film while his voice continues behind the picture.

The Canadian Medical Association is prepared to lend these program packets to any medical society contemplating a TV series.

In stressing the amount of time required in the production of a television show, we are talking, of course, about the planned medical program. On the other hand, a doctor invited to make a one-shot, unplanned appearance may be dismayed at the little or no rehearsal time provided. For the doctor unfamiliar with television, this can be an unnerving experience.

Obviously television, on which hundreds of textbooks have been written, can only be glossed over in a discussion of this type. The intent of this article is to stimulate interest in the medium, and perhaps to encourage the medical society to consider seriously its use. The author would be most happy to assist any medical group which may contemplate production of a program more elaborate than that possible with the package program mentioned above.

"MEDIC"

Reference is made above to this television series produced by the Los Angeles County Medical Society and carried on the Canadian Broadcasting Corporation's television network.

Beginning in 1952 the Canadian Medical Association endorsed the series as a worthwhile health education production although there was some apprehension about the nature of some of the medical conditions discussed in dramatic form. This endorsement was shown at the end of each program.

Despite the high public popularity rating which "Medic" could claim, the C.M.A. endorsement was criticized by some members as well as by some non-medical viewers.

Reassessment of the series last fall led to withdrawal of the Association's endorsement. It was felt at that time that the medical content had been relegated to a minor position in favour of the dramatic. Similarly, it was the opinion of the C.M.A. that in the attempt to find material which lent itself to dramatic treatment all too frequently the program dealt with uncommon medical conditions. It is unlikely that the C.M.A.'s endorsement will be renewed.

B.C. DIVISION ON TV

On Thursday, February 23, CBUT—the Vancouver CBC station—televised an hour-long program, "The Dangerous Years," which had been filmed earlier with the co-operation of the B.C. Division of the C.M.A. The following reviews which appeared in the Vancouver dailies suggest the favourable public reception given the production.

John Kirkwood, writing in the *Vancouver Sun* and with the headline: "Filming of Biopsy Triumph for CBC," said:

> Every once in a while, for a reason no one is quite able to figure out, things seem to go click at the right time and in the right place.
>
> Then one of those days comes along when everything is right, nothing wrong.
>
> That's the way it was with "The Dangerous Years," last Thursday's CBUT filming of a biopsy from the Willow Chest Centre.
>
> This brave and experimental chunk of programming scored a resounding success and marked an important milestone in Canadian television production.
>
> The doctors are happy, the general public is happy, and most of all, the CBC is happy, for this was its hour of triumph.
>
> Viewer reaction to the program, the first of its kind to be attempted in Canada, was instantaneous and enthusiastic.
>
> By the time the CBC switchboard had closed after the show, 50 telephone calls had been received.
>
> More followed on Friday. All were complimentary.
>
> A few stomachs had trembled at the first slice of the surgeon's knife but no one was damning CBUT on that account.
>
> Of the program's success, Marce Munro, program director of CBC television in Vancouver, had this to say:
>
> "We hope that this will be the beginning of a fruitful co-operation between the Canadian Medical Association and television. We are very interested in this educational type of programming."
>
> One of the happiest men involved is Peter Elkington, producer of the show.
>
> He's happy because the program brought more audience reaction than any other in CBUT history and because his insistence that the production should be handled in a "matter of fact" way paid off smartly.
>
> "We felt," he said, "that it should not be dramatized; it contains so much drama in itself. We didn't want to end up with another 'Medic.'"
>
> Elkington, the men of CBUT's mobile unit and the C.M.A. are to be congratulated on their success and further progress in this direction will be eagerly awaited.
>
> It shouldn't take too long now the first step is taken and viewer reaction established.

In the *Vancouver Province,* Les Wedman wrote:

> I haven't heard of one person who turned off Channel 2 during the hour in which doctors performed a biopsy for cancer of a woman's breast.

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There were some who watched with their eyes closed —yes, it's possible—when the first incision was made directly in front of TV cameras. But as a whole, the program was an eye-opener, intelligently and unsensationally presented. And there is no valid reason why this type of operation should not be seen by the public.

As a matter of fact, there should be more.

Peter Elkington, who co-ordinated the project, did a skilful job. Alan Millar in his interviews displayed a keen interest and well-informed background. And best of all, Dr. Charles Battle of the Canadian Medical Association provided a simple commentary in friendly fashion. The CBC and the C.M.A. deserve commendation for the program.

Camera work was excellent and showed clearly the reason for early consultation with doctors about suspected cancer, and allayed all fears of surgery. "The Dangerous Years" was a fascinating documentary. But thank goodness it wasn't in colour.

Men and Books

SALUTE TO A CENTENARIAN

A man should be of good cheer about his soul, who, in his lifetime, has repudiated the pleasures and ornaments of the body as being alien to him, and likely to do more harm than good, and has instead followed the pleasures of knowledge; and has arrayed his soul with its own proper ornaments of self-control, justice, courage, freedom and truth, and decked with these jewels, his soul is ready for the journey to the other world, whenever the call comes.

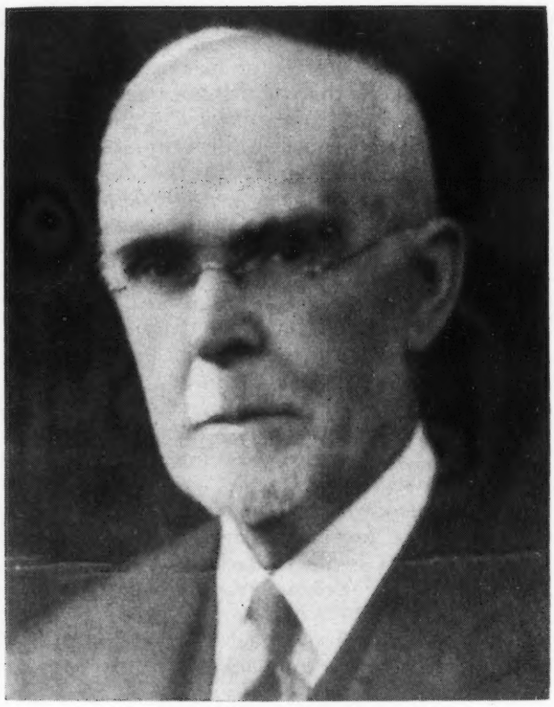
ON APRIL 9, Dr. William McClure celebrated his 100th birthday. Surrounded by family and friends, the "dean of Canadian medical missionaries" crossed the century mark bearing with him the warm satisfaction and cherished memories of more than 50 years' service to the needy, suffering and sick of China.

The long, rich past burned brilliantly in Dr. McClure's memory as he marked that anniversary so few men have known. And with clarity of mind and firm voice he made that past live again.

It would seem, Adeimantus, that the direction in which education starts a man will determine his future life.

William McClure was born at Lachute, Quebec, in 1856. He attended McGill University and in 1897 graduated as Bachelor of Arts, winning a gold medal in mathematics. After teaching for two years, he returned to McGill and studied medicine under such medical giants as Osler, Sheppard and Howard. Upon graduation from medical school in 1884 Dr. McClure served for a brief period as a physician with the Canadian Pacific Railway.

There are regions, *in partibus infidelium*, to which you will go as missionaries, carrying the gospel of loyalty to truth in the science and art of medicine, and your lives of devotion may prove to many as a stimulating example.



Dr. William McClure

In 1888, Dr. McClure went to China. His first year was spent in language study in Shantung. This linguistic foundation, together with his half-century among the Chinese, gave him an outstanding grasp of the language. "William McClure," said one of the doctor's close associates, "could speak at all levels of the Chinese language. He was as much at home speaking the language of the ill-educated as he was in the tongue of the scholar." Following his year of language study, the medical missionary, together with another physician, started the medical work of the Canadian Presbyterian Mission in North Honan. For more than 25 years Dr. McClure expanded medical services in this part of China.

Let young men go abroad. They may find abroad wide sympathies, heightened ideas and something perhaps of a *Weltkultur* which will remain through life. . . .

In 1902, after the Boxer Rebellion, during which Dr. McClure escaped the massacre of 40,000 Christians and 200 missionaries, a dark moment in Chinese missionary work, the Canadian physician returned to Canada for a visit and while here was a co-guest of honour with Sir William Osler at a McGill University dinner. The story is told that Osler, who had just delivered the University Lecture, commented to an acquaintance at this dinner: "What a shame it is for a man of McClure's ability to bury himself in China." Dr. McClure was not informed of this remark until his 90th birthday, 45 years later.

"Did Osler say that? Do you remember the

subject of his lecture that day? 'The Vice of Parochialism in Medicine.'"

(Dr. McClure was to be honoured by McGill University once again. In 1936 he received the honorary degree of Doctor of Laws.)

He is no longer *Sir Oracle,* perhaps unconsciously by his very manner antagonizing minds to whose level he cannot possibly descend, but he is a senior student anxious to help his juniors.

In 1916, at the age of 60, Dr. McClure was appointed professor of internal medicine at Chee Loo University in Shantung Province. He accepted the appointment with enthusiasm, although with some apprehension. "I didn't know much about internal medicine," he said, "and I joined the staff with fear and trembling. I worked hard, often into the small hours of the morning preparing my next day's lectures."

Although most of the students could understand English, Dr. McClure taught in Chinese. It is told that during a students' strike at the university, the students complained that none of the Western professors spoke Chinese as beautifully, or taught as clearly, as did Dr. McClure.

I have seen many teachers . . . but I have never known one in whom were more happily combined a stern sense of duty with the mental freshness of youth.

"When I accepted the appointment to Chee Loo University, I planned to stay for only four or five years and then to resign to make way for younger men," Dr. McClure recalled. Ten years later, at the age of 70 he handed in his resignation. It was rejected and the students congregated to pay tribute to their friend and teacher, entreating him to remain with them. At 75 and again at 80 he resigned, only to have his resignations refused and his students celebrate his decision to remain a professor and chairman of the Department of Medicine. And each time the students followed the time-bound custom of showing respect for advanced years, presenting him with beautifully embroidered scrolls bearing the symbol of old age. These cherished souvenirs brighten the walls of Dr. McClure's bedroom.

But retirement came shortly after his third decision to resign. He returned to Canada when the Japanese invaded Shantung Province in 1938.

Dr. McClure today lives in his comfortable home at 108 Strathallan Boulevard, Toronto. Although he cannot now go up or down stairs, he is still active and cheerful, and has fairly good eyesight and hearing. Much of his pleasure comes in weekly letters from his son, Dr. Robert McClure, who, following in his father's footsteps, is a medical missionary in Ratlam, India. Dr. Robert flew from Bombay to be present on his father's birthday.

What the future has in store for me, I cannot tell—you cannot tell. Nor do I care much, so long as I carry with me, as I shall, the memory of the past you have given me. Nothing can take that away. L.W.H.

GENERAL PRACTICE

COMMITTEE ON RESEARCH

THE BOARD OF REPRESENTATIVES of the College of General Practice of Canada at its recent meeting in June directed that a Committee on Research be established and appointed Dr. M. E. W. Gooderham of Don Mills, Ont., as its Chairman.

The terms of reference of this Committee as laid down last year are: "It shall explore the possibilities for research in general practice and encourage the study of research projects by family doctors in this country."

It is to be the task of this Committee to organize and co-ordinate a plan of medical research by the general practitioners of Canada.

The College of General Practice has been encouraged to enter this field of research by the program of research developed by our sister organization, the College of General Practitioners of the United Kingdom. For your information we would like to outline briefly some of the aspects of their program. It provides a challenge that Canadians should be ready to meet.

The College of General Practitioners of the United Kingdom was founded in 1952 and in 1953 it formed, along with certain other committees, a Committee on Research.

It is clearly implied that "research in the field of medicine seen by general practitioners is potentially as valuable as that carried out in hospital wards or a university department. This is a challenge to those in general practice who see the beginnings of disease, to make a fuller contribution to its study by investigating more fully the problems they handle."

Their Committee felt that three types of general-practitioner research workers had to be considered: the independent worker with an objective such as an M.D. thesis; the worker whose interest was shared with others and who might wish to join with them to study a common problem, and the practitioner who would be willing to collect information in his practice for central analysis.

Certain principles would guide the Committee in the investigations which it would undertake. No attempt would be made to compete with other research organizations and no work would be attempted which could be carried out better by others. Every project of the College would be one which could yield information applying to and of value to general practice. It was also accepted that when the results of such a College investigation were complete, publication would be as the work of a College group and not as the work of any one individual. The names of all

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those who had played a part in such investigations would be listed with each contribution.

A Research Register was established in which a member's interests are recorded. Some 700 doctors are now listed in this register. The Committee on Research keeps its members informed of the work being done by means of Research Newsletters of which seven have been published to date.

TYPES OF RESEARCH

1. (a) Measles investigation—to assess the value of sulphonamides and antibiotics in preventing bacterial complications of measles.

(b) A large-scale morbidity survey to which over 100 members of the Register will supply the material which the Registrar-General statisticians will analyze.

(c) A College Records unit.

(d) Revision of the International Statistical Classification of Diseases, Injuries and Causes of Death.

(e) Clinical trials of therapeutic substances.

(f) Epidemic Observation Unit.

2. *Special Group Studies* are in progress dealing with respiratory tract diseases, hereditary diseases, psychosomatic diseases and the value of tonsillectomy.

FACULTY-SPONSORED INVESTIGATIONS

(a) The pattern of practice of obstetrics by each individual.

(b) A study of the symmetry of the heads of babies to determine if any relationship exists between cranial asymmetry and the later development of right or left handedness.

(c) A study of neoplastic groups uninfluenced by therapy.

(d) An epidemiological survey of such diseases as glandular fever, infective hepatitis, and epidemic winter vomiting.

It is plain from a listing of the activities of their Committee on Research that the potential for the accumulation and interpretation of medical facts across Canada by such means is staggering to the imagination. The amount of work required to develop such a program seems almost overwhelming. However, the rewards would be well beyond measure.

Such research in general practice lays emphasis on the value of individual work. There are innumerable clinical impressions to be gained by family doctors every day. The attempt to discuss whether they are based on fact is intellectually satisfying, but the doctor also needs to know whether his observations are new or whether others have made them and explained them satisfactorily. For this he needs help. Moreover, the discipline in accurate and critical clinical observation must tend to make any doctor a better doctor, and thus help to raise the standard of medical practice.

The following subjects are suggested as examples only of projects that we might investigate:

1. Boils—occurrence—treatment.
2. Anæmia—therapeutic value of different drugs and combinations of the same.
3. Investigation of the relationship between German measles and fetal abnormality.
4. The value of tonsillectomy.
5. Should people with gallstones and without symptoms be operated on or may they be observed?
6. An attempt to sort out and designate the various types of childhood respiratory infections and to evaluate the role of sulphonamides and antibiotics in their treatment.
7. Current infections.

Recommendation:

It is recommended by this Committee that its organization next year include: Chairman; Vice Chairman; Publication and Public Relations Chairman; Project Chairman—one for each project under investigation; Provincial Representative—one for each province.

We propose to make haste slowly for we feel that we should not embark on too many projects at once. Any general practitioner, whether a member of the College of General Practice or not, who is interested in taking part in this work is requested to advise the Committee on Research of the College of General Practice, 176 St. George Street, Toronto, and include the following information:

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1. Name .....

   Address .....

   Telephone number .....

   Type of practice carried on:

   (a) Rural ..... (b) Urban .....

2. I desire to participate in the investigation of the following subject or subjects:

   (a) .....

   (b) .....

COLLECTIVE INVESTIGATION

WE ALWAYS THINK that we are wiser than our fathers, but a study of old journals and records often reveals the fact that our predecessors had exactly the same bright ideas as we are claiming at present. A recent article by McConaghey (*Brit. M. J.*, Suppl., 1: 59, 1956) shows clearly that the idea of conducting investigation with the aid of large numbers of general practitioners as observers is not new. From the early days of the British Medical Association collective investigations in which members participated by questionnaire were quite a feature of the Association's life. In 1880 the Association, stimulated by two remarkable men, embarked on large-scale intensive investigations. The two remarkable men were the President, Sir George Humphry, who began as a general practitioner without a practice and became the most influential man in the University of Cambridge, and a dynamic young man, Dr. F. A. Mahomed, also associated with Cambridge. These two tried to sell the British Medical Association the idea of forming a Combined Observations Committee. The Committee chose subjects for studies which were commonly met with in general practice, and its first list included acute rheumatism, chorea and pneumonia. Questionnaires were launched in a big way and the reports of the Committee were published in four separate volumes. The results were perhaps a little disappointing. The first report on tuberculosis did not establish completely its infectious nature. The second report on pneumonia revealed no new evidence, but showed that the mortality was then 1:5½. The time was not ripe for progress in studies of puerperal fever, erysipelas or scarlet fever, which gave equivocal results. Although this Committee, weakened by the premature death of Mahomed, petered out within 10 years, it had sparked a collective investigation "fever" both in Germany and the United States. The movement which the British Medical Association started eventually spread around the world, so that its long-term effects remain incalculable.

CHANGE OF ADDRESS

Subscribers should notify the Canadian Medical Association of their change of address *two* months before the date on which it becomes effective, in order that they may receive the Journal without interruption. The coupon on page 75 is for your convenience.

MEDICO-LEGAL

INCONSISTENCIES

T. L. FISHER, M.D.,* *Ottawa*

AN ORGANIZATION like the Canadian Medical Protective Association, originated and founded by members of the profession, owned and run by the profession, for the protection of doctors who are faced with "unjust, harassing or frivolous" actions, has a greater duty to its members than is fulfilled by providing them with legal defence, making settlements for them where their cases are indefensible, or paying damages for them if they are awarded by a court. Actions against doctors breed more actions; settlements encourage more demands, and particularly would unjustified settlements encourage a spate of actions. Therefore the profession's own defence organization should be willing, not only to do the obvious things for its individual members but continuously to give its help in such a way that the profession as a whole will be harmed as little as possible by any action against any doctor. Ordinarily this means, as a matter of principle, that the Association should be willing to spend more to defend a member successfully than to settle an unjust claim against him.

Such protective help for a member may have to be given where a patient threatens or brings an unjust action against a doctor perhaps because of misinformation about the nature of the condition for which he was being treated, or perhaps because he dislikes the doctor personally, in an effort to embarrass the doctor or perhaps just to avoid payment of an account. Many of these patients make it quite clear that they are resolved to carry their claims to court unless settlements are made. The sums demanded are quite often small, sometimes no more than a few hundred dollars, oftener a thousand dollars or two. The costs of defence, presuming the defence be successful, of almost all the cases will be more than the proposed settlement. Because more and more claims against doctors would be made if such settlements were commonly made, the good of the profession demands that the Association be prepared to defend any action against a doctor that is defensible, almost irrespective of cost.

Though the general principle is accepted that defence is better than settlement, there are cases where, in the best judgment of the doctors and lawyers responsible for their conduct, exceptions to the general principle must be made.

Two or three years ago a dermatologist of recognized attainment and reputation was consulted by a patient who had an acutely inflamed and swollen thumb with

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*Secretary-Treasurer, Canadian Medical Protective Association.

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a rash which was spreading on to the hand. It had been present for two or three years but recently had been made worse by an iodine burn. The dermatologist prescribed bland therapy and, for its soothing effect, 50 r units of x-ray, unfiltered (measured in air). The dermatologist recognized the man as a nervous, tense individual with both home and business difficulties. A week later little improvement had been noted, minor changes were made in the therapy and another 50 r units of x-ray were given. A third treatment was given in another week and because the eruption continued to spread, a fourth treatment was given later. Almost immediately afterward the patient went on a short trip after which, it was learned later, he was much worse and he placed himself in the hands of another doctor. Considerable treatment was given and then complete healing did not occur.

Less than a year later the patient threatened action against the doctor on the ground that he had had continuous trouble with his hand as a result, he claimed, of an x-ray burn. The doctor denied responsibility but the patient carried his complaint further and issued a writ against the doctor. The action dawdled along for a number of months but finally was set down for trial.

About that time, apparently, the patient realized that he could not win his action against the doctor so, through his solicitor, he expressed a willingness to allow the action to be dismissed if the doctor was willing to assume his own costs—costs, it can be seen, which need never have been incurred if the patient had not begun an unjustified action against the doctor.

The doctor and the Association then had to decide whether to insist that the case be tried and, if won, costs collected. Such a course of action would double or triple the costs of disposing of the claim and all that would be gained would be the collection of costs from the plaintiff if he were able to pay them. Finally it was decided to allow the case to be dismissed and a Court Order was obtained dismissing it. Handled as it was, the legal costs were something over $1,000 because all the work had to be done to prepare for trial.

Another case illustrates the quandary more pointedly. A young and well-trained genitourinary surgeon was consulted by a patient because of backache. X-ray did not reveal any metastatic bone lesions but examination of the prostate forced a clinical diagnosis of carcinoma of the prostate. Acid phosphatase determination was barely above normal and on re-check was just about normal. A needle biopsy of the prostate did not yield any malignant tissue. Nevertheless, the surgeon considered that the consistency of the gland made for a diagnosis of carcinoma and therefore he recommended orchidectomy. This was done and, apparently, the man's pain ceased and, except for the loss of his testicles, he felt better. However, the loss bothered him and he instituted action against the doctor claiming $100,000 damages.

Preparations were made for trial and in the course of those preparations a number of genitourinary surgeons were interviewed. All but one felt that the orchidectomy had been done on evidence they would have considered insufficient so they could not honestly assist by giving evidence for the doctor; the one felt strongly that if the surgeon after careful examination was satisfied in his own mind that the prostate was carcinomatous he was the only person qualified to give an opinion and that his opinion, as a result of physical examination, was more likely to be right than an opinion based on the results of laboratory tests.

During the time these interviews had been going on the plaintiff's solicitor had made tentative offers of settlement which finally got down to $500. The doctor, the Association and its solicitors then were faced with the problem of the harm of settlement compared with the uncertainty of trial. Much of the evidence would be equivocal, no one could say whether or not the patient did have carcinoma; if the Association experience could be relied on, the plaintiff, without much trouble, could have obtained a number of doctors who felt the preliminary investigation was inadequate while the Association would have had difficulty getting experts.

Therefore it had to be decided that the small settlement was less harmful to the doctor and to the profession as a whole than an adverse decision which, very probably, would have been rendered.

MEDICAL MEETINGS

WORLD MEDICAL ASSOCIATION

26TH COUNCIL SESSION

The council of the World Medical Association will be convened in its 26th session in Cologne, Germany, April 29-May 5, 1956.

The council, composed of the officers, officials and 11 members of the General Assembly elected for three-year terms to represent the five regional areas of the world, is the executive and administrative body of the World Medical Association. It meets three times each year and devotes its annual spring session to implementing decisions taken at the last annual General Assembly and preparing for the forthcoming General Assembly. The 1956 assembly will be held in Havana, Cuba, October 9-15, 1956.

The items on the agenda of the 26th Council Session which will receive detailed consideration include:

The detailed reports of the Education Committees of the National Member Associations on the proceedings of the First World Conference on Medical Education (held in London in 1953).

The program for the Second World Conference on Medical Education to be held in Chicago, the last week in August 1959. The theme of the Second Conference will be postgraduate medical education. The American Medical Association will be host to this conference. Collaborating with the World Medical Association in organizing it are the World Health Organization; the International Association of Universities; and the Committee for International Organization of Medical Sciences (CIOMS).

Ways and means of establishing a universally recognized emblem for the protection of civilian doctors in peace and war.

Problems involved in the establishment of an International Medical Law.

Implementation of programs for: international exchange opportunities in medical education; assistance to the medical profession in under-developed countries; development of a central repository for medical credentials.

Belgian Government Surrenders to Wishes of Medical Profession

The Belgian government has unconditionally surrendered to the demands of the medical profession to withdraw its attempt to regulate medical care and medical service under its social security scheme through legislative status. In addition it has agreed to accept the principle of non-intervention through law and to recognize the conventions agreed upon through the joint efforts of representatives of the medical profession and the insurance companies.

In September 1955 the Belgian government instigated legislative measures which would regulate all activities in medical service and medical care. Belgian doctors unanimously opposed the government plan. Their united effort has now resulted in an unconditional surrender of the government, and recognition by the government of the medical profession's plan to provide good medical care and service to the people.

PAN-AMERICAN MEDICAL WOMEN'S ALLIANCE

(The following has been received from the Canadian delegate to the Fifth Congress of the Pan-American Women's Alliance.—Ed.)

Here is a résumé of the meeting of the Fifth Congress of the Pan-American Medical Women's Alliance which was held in Santiago, Chile.

Of all the medical meetings I have attended in my 30 years of practice, I doubt if any of them was more scientifically presented or socially comparable. Not only was there a scientific inter-relationship between Pan-American countries, but one felt that the beautiful city of Santiago was in a festive mood, everyone trying to do his utmost to foster good relations with the many countries represented by the women physicians.

The Congress was opened in the Honour Salon at the University of Chile by the President of Chile, with very interesting and laudable speeches from the Minister of Health, and the Dean of the Faculty of Medicine. It was interesting to learn that in countries where just a few years ago woman was an object to be admired only, at present the woman in medicine, law and business has a better standing in the community than in our so-called civilized North America. The Dean of the Faculty of Medicine announced with pride, "Our women physicians can be anything they desire, and are Chief Surgeons, Chief Gynæcologists, Chief Pædiatricians, etc." His Excellency, the President announced that while he was in office he would advocate that women take part as leaders in any of the government departments. The Mayoress of Santiago is a brilliant woman, who entertained us at the Cousino Palace in an unforgettable way.

The Santiago Medical Association gave an elaborate dinner, followed by luncheons and dinners by the President of the Republic and Faculty members, and cocktail parties were given by most of the Ambassadors, in honour of their medical representative, except the Canadian. I was the only Canadian representative at the Congress, and read a paper on "Allergy, Its Allied Disorders and the Forgotten Man", which was well received.

The programs were divided into sections, such as "Social Security of Families in America", "Problems of Infertility", "Woman and the Study of Medicine", "Cancer in Women", subjects in Internal Medicine, Surgical Problems, Tumours, Benign and Malignant, and a most interesting paper presented by Dr. Edna Silva-Inzunza (Chile), "Estudio citologico de preparaciones frescas para diagnosticar la naturaleza y el sexo de tumores". This described a very interesting cytological study of the cell in relation to sex hormones. I discussed this paper, since I consider it of value in the treatment of certain malignant conditions with hormones.

I think this was a very successful meeting, and most interesting, not only from the scientific point of view, but also in fostering good relations with South American countries. I believe that our medical women of Canada should join the Pan-American Women's Alliance. We can all learn a great deal from those countries as scientifically minded as we are, maybe more.

P. BEREGOFF-GILLOW, M.D.

INDUSTRIAL MEDICINE

The annual combined meeting of the Industrial Section of the Ontario Medical Association and the Industrial Medical Association of the Province of Quebec will take place in Hamilton, Ontario, on September 26, 27 and 28, 1956.

All physicians with full- or part-time industrial affiliations are welcome to attend this most interesting, informative, and pleasant program. Registration will be at the Royal Connaught Hotel from 9:00 to 11:00 a.m. on September 26, 1956.

MEDICO-LEGAL SOCIETY OF TORONTO

On February 29, the Society considered the effect of medical advances on legal attitudes and thinking. The electroencephalograph was presented by Dr. John Scott not only in terms of revealing brain damage but also in the revelation of disturbed brain functioning. In the instance of a criminal act, would a proven disturbance of brain functioning reduce culpability? The notion of consciousness as either present or absent was shown by Dr. J. Lovett Doust as invalid. Levels of consciousness from unconsciousness to full awareness existed and responsibility in the sense of all or none was not substantiated by medical researches. Dean C. Wright discussed the two presentations from the standpoint of legal practice and legal principle.

CANADIAN OTOLARYNGOLOGICAL SOCIETY

The annual meeting of the Canadian Otolaryngological Society will take place at the Château Frontenac, Quebec, on June 6 and 7, 1956. The guest speaker at this meeting will be Dr. F. T. Hill of Waterville, Maine, who is President of the American Board of Otolaryngology. Dr. Hill will deliver two addresses—on "Changing Aspects of Otolaryngology" and on "Errors in Otolaryngology". The annual dinner will be held on Wednesday, June 6, and the guest of honour will be the Honourable George C. Marler, Minister of Transport.

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CORRESPONDENCE

ANTIBIOTICS IN DERMATOLOGY

To the Editor:

I was interested to read your editorial comments of February 1, 1956, on the topical use of antibiotics in dermatology, and would certainly agree with you that sulphonamides and penicillin should not be used as local applications for superficial pyogenic lesions, cuts or abrasions of the skin. These substances are used far too frequently in the ambulance rooms of industry, and they are potent sensitizing agents, especially if they are rubbed into the skin, which they should not be.

Impetigo, sycosis barbæ, pustular acne and infected fissures behind the ears will all respond rapidly to gentle application, thrice daily, of freshly made 1% aureomycin cream according to the following formula:—

	1% Aureomycin		
℞.	Polawax	10	parts
	Petrolatum	35	parts
	Water	55	parts
	Chlorocresol	0.1	part

I am satisfied that this cream is more effective than other preparations using the same or other antibiotics in various different bases, after trials on organisms growing on culture media and after using it on many hundreds of patients. Many cases of impetigo are almost healed in three days so there is little need to use this remedy for longer than a week.

The number of cases of sensitization in patients who have had no previous treatment is infinitesimal, and where a reaction has taken place it has been found that the cream was rubbed in with some vigour instead of being smeared on gently.

I see no reason to use any stronger cream than 1%, nor do I believe that the use of a 1% aureomycin cream for a limited period of time is likely to cause any great increase in the number of organisms insensitive to this antibiotic.

The North Cottage, R. MASON BOLAM, M.D.
Adderstone Crescent,
Jesmond,
Newcastle on Tyne, 2, England,
March 2, 1956.

VITAMIN K DOSAGE

To the Editor:

It now seems that one can become over-enthusiastic with intravenous Vitamin K or its analogue, menadione, when confronted with hæmorrhage from hypoprothrombinæmia. Recently in your columns, Dr. Beamish[1] has reported a hæmolytic reaction following a total intravenous dose of 220 mg. of K substances within 24 hours (2 x 60 mg. Kavitan and 100 mg. Mephyton). Dr. Brunton,[2] however, reporting on seven cases with a prothrombin concentration below 5% found that 2 or 3 mg. was sufficient to bring the prothrombin back to within the therapeutic concentration within 24 hours, and that larger doses did not act more rapidly. Dr. Gamble[3] goes a step further and claims that oral doses of K_1 as low as 1-5 mg. are as effective as the larger intravenous doses generally recommended. This latter contention may perhaps be open to some dispute, and because of this, intravenous doses of up to 50 mg. of K_1 are recommended in an emergency.

Dr. Beamish is inclined to attribute the hæmolysis he encountered to K_1, since the patient also experienced a febrile reaction following this injection. However, hæmolysis has not previously been reported following K_1 injection, though it has been attributed to a water-soluble vitamin K analogue;[4] furthermore, animal studies would also seem to incriminate the latter,[5, 6] and finally, Dr. C. W. Mushett[7] of this Company was quite unable to produce hæmolysis in dogs with intravenous doses of K_1 up to 10 mg./kg. All that can be said with any assurance in this case is that hæmolysis followed a stiff intravenous dose of both products; the effect may well have been cumulative, and there is no evidence on which we can apportion the blame between K_1 and K analogue.

I am, however, in complete agreement with Dr. Beamish's conclusion that tablets can usually supplant the intravenous injection.

Merck & Co. Limited, J. H. LAURIE, M.A., M.B.,
560 De Courcelle St., Medical Director.
Montreal 3, Que.,
March 8, 1956.

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ULCERATIVE COLITIS

To the Editor:

I think the article "The Use of ACTH and Cortisone in Idiopathic Ulcerative Colitis" by Maltby *et al.* (*Canad. M. A. J.*, 74: 4, 1956) deserves further comment.

In this article, the authors essentially compare two groups of patients with ulcerative colitis. The first group was treated from 1930 to 1950 and the second group was treated subsequent to 1950. The entire article implies a comparison of the results in these two groups. I do not feel, despite the authors' comparisons, that it is possible to make this comparison. The authors say as much in their discussion: "It is not possible to make a direct comparison of the results obtained in the two series."

It is of significance also that the series of patients treated after 1950 included patients with "early disease". It is obvious that patients with early disease will frequently do well with or without cortisone and that to include them in the comparison is another reason for thinking that the comparison of the two series is invalid. In addition, the authors say that the improvement in the mortality and morbidity rates during the last five years is largely due to the introduction of ACTH and cortisone. It would seem obvious that the great improvements that have occurred in antibiotics, fluids and other supportive therapy cannot be so easily by-passed. It is also said that in 16% of the patients in the first series there were periods of complete suppression of the disease as compared to 32% in the second series. It would seem obvious that when the second series has been followed long enough, this figure of 32% improvement will very soon approach 16% too.

I do not think that there is any argument that on occasion cortisone and ACTH are of significant help in very seriously ill patients with chronic ulcerative colitis. However, it is my experience that as good results as are quoted in this article can be obtained by the use of vigorous other supportive therapy. It has also been my personal experience that the patients with very severe illness are frequently not improved by periods of cortisone or ACTH therapy. In particular, patients with severe perianal infections may be made markedly worse.

A. G. ROGERS, M.D.

Mall Medical Group,
Memorial Blvd. at St. Mary's,
Winnipeg, Man.,
March 19, 1956.

MEDICAL EDUCATION OF THE PUBLIC

To the Editor:

I believe the time has come for the profession to consider most seriously the ever-increasing medical education of the lay public.

Our main purposes as physicians are naturally the alleviation of suffering, the curing of sickness and the proper education of the public. The motives of the cancer societies and the health organizations are of the highest order but we must ask ourselves whether they are not causing much unnecessary suffering by their propaganda. Malignant disease of the body surface may be curable it is true but most persons would come to their doctor with a "sore that does not heal" anyway. Our cure rate in the hidden organs is hardly satisfying. Who has not examined a case of cervical cancer in a woman whose symptoms have been most recent only to find a tragic extension of growth? Again, who has not seen incurable symptomless lung carcinoma in a patient who had undergone a routine chest x-ray? It is true that early cases bring hope of cure but education does not always bring patients to seek medical advice. The very knowledge of a possible cancer may rather deter the patient from visiting the doctor. I remember while a student the case of a surgeon with a far advanced case of gastric carcinoma who knowing his condition for some time and the small hope of cure preferred to continue with his work rather than undergo surgery. We must all have seen nurses with long histories of lumps in the breast who have waited long before they sought advice.

Meanwhile this education has caused much needless fear and anxiety among people without the disease. It was interesting to read the correspondence in *Life* magazine following Dr. Crile's provocative and timely article on cancer. Those writing on behalf of associations and cancer societies tended to condemn it but a patient wrote, "After my cancer operation, I became painfully conscious of all the propaganda being published and broadcast. My fear . . . was magnified an hundredfold." A general practitioner wrote of the increasing number of patients he was seeing with cancer phobias and other phobias; who has not had similar experiences? During my period of internship and a short period in general practice I can well remember the people who had functional disorders and who admitted occasionally with hushed voice that they thought it might be cancer. Sadly, in a few cases, even the most extensive investigation could not convince them that their fears were groundless.

Mr. John Everyman and his wife cannot read their "digests" and their "home journals" without finding some reference to disease. As they travel to work "heart disease, the number one killer," appears on the bus advertisements. Finally, in the evening, they are now subjected to watching breast amputations on television. Where will this all end? Are we not partly responsible for the crowd of so-called "neurotics" who fill our waiting rooms?

It was enlightening to hear the comments of some non-medical people on the televizing of breast operations. While some were fascinated, others were disgusted. We in the profession may be used to blood and breasts and surgical procedures. Unfortunately with this bias it is difficult to appreciate the effect this might have on the unduly sensitive, the introspective or perhaps someone who has recently seen a relative dying from the very same disease.

I would be most interested to hear the comments of other more experienced practitioners on this subject and whether it is possible to prevent excessive and unwise medical "education" by well-meaning people.

MICHAEL C. P. LIVINGSTON, M.A., M.D.
Department of Neurological Research,
University of British Columbia,
Vancouver, B.C.,
February 25, 1956.

PHÆOCHROMOCYTOMA

To the Editor:

The writer of the editorial "Phæochromocytoma: a review" (*Canad. M. A. J.*, 74: 156, 1956) refers to the opinions of Goldenberg and von Euler that measurement of urinary catecholamines (adrenaline and noradrenaline) is "the only completely reliable test" for the presence of this tumour. The statement follows that "unfortunately the methods employed are difficult technically" . . . and "far too difficult for routine use."

In fact several methods for determining urinary catecholamines are available, some being given in the paper by Goldenberg *et al.* referred to. The Weil-Malherbe and Bone procedure is thus far applicable to blood, but probably can be modified for use with urine. Recently von Euler and Floding have adapted the Lund procedure for use with urine (*Acta physiol. scandinav.*, 33: Suppl. 118, 57, 1955) and although recoveries of added catecholamines are only 70 to 80% complete, the differences between normal and "phæochromocytoma" urine are so great that the distinction is clear-cut.

I wish to take issue with R.H.S. on one point: the procedures for measuring catecholamines are not difficult since they involve no steps particularly different from those to which technicians are accustomed. True, they may occupy more of the technician's time than do the usual routine analyses, but this should not be an objection, at least, let us say, in a large hospital where the rapid weeding out of "true" from "false" among suspected phæochromocytoma patients may save much time for the diagnostician, the patient and the hospital staff.

The Allan Memorial
Institute of Psychiatry,
1025 Pine Avenue West,
Montreal, Que.,
March 1, 1956.

T. L. SOURKES, Ph.D.,
Assistant Professor and
Senior Research Biochemist,
Department of Psychiatry,
McGill University.

Association Notes

OFFICIAL OPENING OF C.M.A. HOUSE

MOST MEDICAL ASSOCIATIONS have gone through three stages in their development. In the first stage the work of the association has been carried out by one or more devoted persons, doing the job in their own homes and in their own spare time. The second phase begins when the society feels strong enough to rent space and employ secretarial help. The third phase in the life of a successful association is the acquisition of its own business premises. On Saturday, March 17, the Canadian Medical Association reached that third stage, when the Minister of National Health and Welfare, the Hon. Paul Martin, cut a white ribbon and officially opened C.M.A. House at 150 St. George Street, Toronto.

The ceremony was preceded by a luncheon at the Granite Club, Toronto, to which many representatives of sister societies, public bodies and universities had been invited. The head table was presided over by Dr. T. C. Routley, President of the Canadian Medical Association and the British Medical Association, and he had

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C.M.A. House, Toronto.

with him the Hon. Paul Martin, Dr. Emile Blain, Director-General of l'Association des Médecins de Langue Française du Canada, Dr. J. W. MacFarlane, Dean of the Faculty of Medicine, University of Toronto, Principal Cyril James of McGill University, the Right Rev. F. H. Wilkinson, Bishop of Toronto, Dr. Norman Gosse, Chairman of the C.M.A. Council, Dr. J. T. Phair, Deputy Minister of Health, Ontario, and Dr. A. D. Kelly, the General Secretary. The entire membership of the Executive Committee was present. Other bodies represented at the luncheon and later at the opening included: the City of Toronto, the Medical Exhibitors Association of Canada, the Canadian Dental Association, the Canadian Bar Association, Royal Architectural Institute of Canada, Canadian Pædiatric Society, Canadian Otolaryngological Society, Canadian Commission on Hospital Accreditation, Royal College of Physicians and Surgeons of Canada, Trans-Canada Medical Plans, Canadian Hospital Association, Toronto Academy of Medicine, Toronto East Medical Association and Ontario Medical Association. In one or two instances representatives were present in a dual capacity, for the C.M.A. had invited representatives of all its former landlords. After welcoming the guests, Dr. Routley recalled the days when the C.M.A. office was in the heads, pockets and buggies of former honorary secretaries. After 50 years the C.M.A. was given a home by McGill University in 1916; the Secretariat was housed by the University of Toronto from 1923 until 1946 and then obtained office space first in the Ontario Hospital Association building and later in the Ontario Medical Association building. Principal Cyril James and Dean MacFarlane conveyed the congratulations of their universities to the C.M.A. on this happy occasion. The General Secretary of the C.M.A., Dr. Kelly, expressed the appreciation of the staff, now consisting of five men and 16 women, to the Executive, the General Council, and the membership for making such good accommodation available. He briefly traced the history of the house, which was built in 1889 on land previously belonging to an Irishman, Thomas Mulligan, and a Scot, Mr. MacAndrews. The house, which at first stood in pleasant surroundings on the edge of the country, was occupied by Mr. William Crowther until 1926, when it passed into the hands of the China Inland Mission. The Mission transferred the property to the C.M.A. in the fall of 1955. Dr. Kelly referred to the very pleasant nature of the negotiations which had taken place between the C.M.A. and the Rev. W. W. Tyler of the China Inland Mission, whom everyone was happy to see present that day.

The actual opening ceremony was held in the board room of C.M.A. House at 3.30. After an introduction by Dr. Routley, Bishop Wilkinson

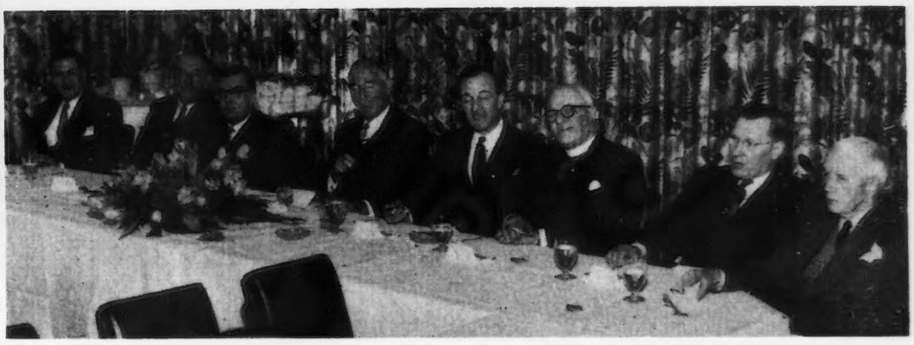
Official
OPENING

C.M.A. HOUSE

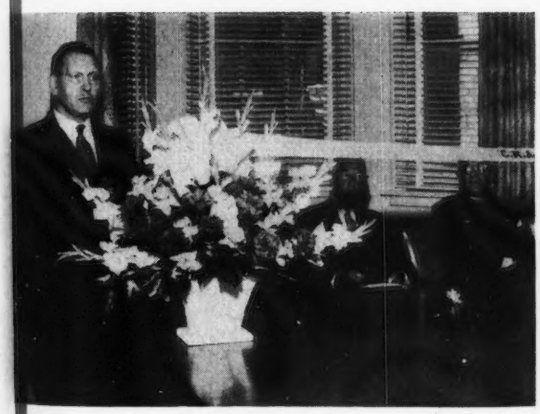
March 17, 1956

The Hon. Paul Martin cutting the traditional ribbon as he declares C.M.A. House open.

Dr. T. C. Routley speaking at the luncheon, while ncipal James of McGill University looks on.



The head table at the official luncheon at the Granite Club: (left to right) Dr. E. Blain, Dean MacFarlane, the Hon. Paul Martin, Dr. Routley, Principal James, the Bishop of Toronto, Dr. N. Gosse and Dr. J. T. Phair.



Dr. Norman Gosse addresses the guests at the official ning; Dr. Routley and the Right Reverend F. H. kinson, Bishop of Toronto, are seated.

Right.—Principal Cyril James of McGill University speaking at the luncheon.

Left. — The Quebec members of the Executive Committee present the provincial flag to C.M.A. House: (left to right) Dr. T. C. Routley, Dr. N. Gosse, Dr. W. Scriver, Dr. A. Powers, Dr. G. Halpenny, Dr. R. Lemieux.

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dedicated the house to the service of mankind. Dr. Norman Gosse introduced the Hon. Paul Martin and the latter spoke of the cordial relations existing between his Department and the C.M.A., after recalling various events in the history of the Association. Speaking of the relations between government and medicine, he said: "It has always been my policy, and will continue to be my policy, to keep the members of the medical profession fully informed of any new developments that might be of interest and importance to them. I can assure the doctors of Canada that the present Government has no intention of taking any action that would disregard their legitimate interests or that would be calculated to destroy the essential traditions of medicine." He also referred to the recent visit of a scientific delegation of virologists and other medical specialists from the Soviet Union, who were greatly impressed with what they saw and the high standard of Canadian medicine generally. The purpose of the visit had been to investigate Canadian methods of producing and administering the Salk vaccine for poliomyelitis. He said: "I am convinced that it can only redound to the credit of the free world to acquaint representatives of the Soviet Union, or any other country, with a scientific and administrative achievement that has brought so much credit on this nation's health workers. And I would hope that our attitude in this particular would be regarded by those who enjoyed this hospitality as an evidence of the strength of our free way of life as opposed to Communism's authoritarian regimes." He referred to plans for establishing health insurance, stressing the need for consultation between government and organized medicine and referring to the enviable reputation of Canadian physicians for ethical conduct, skilled treatment and devoted service. Mr. Martin then declared C.M.A. House open. Visitors were invited to tour the premises, after which they returned to the board room for light refreshment. Presiding at the tea and coffee urns were the wives of two Past Presidents, Mrs. F. N. G. Starr and Mrs. Harris McPhedran.

PRESENTATION OF QUEBEC FLAG TO C.M.A. HOUSE

During the Executive Committee meeting on March 16, the Quebec Division of the C.M.A. took the first step towards the embellishment of the Board Room at C.M.A. House, 150 St. George Street, Toronto, when the representatives of the Division—Drs. G. Halpenny, A. Powers and W. de M. Scriver—presented the beautiful flag of the province of Quebec (a white cross and white fleurs-de-lis on a blue ground) to the Executive Committee. The flag will stand in the Board Room, where it will no doubt be joined later by symbols of solidarity from other divisions. The Nova Scotia Division has already indicated its intention to make such a presentation. In presenting the flag, Dr. Scriver said:

"M. le Président et messieurs:

"Comme vous connaissez, la dévise de la province de Québec est 'Je me souviens'. Nous de la division de Québec voulons que, même que la siège sociale de notre Association est enfin établi ici à Toronto, vous n'oublierez jamais le berceau de notre Association dans la ville et la Province de Québec. The motto of our Province, as you know, is 'I will remember', like the Scots' 'Dinna forget'. Even though our headquarters have now gone forever from Quebec, we cannot forget that the birthplace of this Association was in the city of Quebec in 1867.

"In this respect, and in keeping with our provincial motto, I would quote the poem of Rupert Brooke:

'If I should die, think only this of me
That there's some corner of a foreign field that is for ever England.'

"We of the Quebec Division wish to present to the parent body our provincial flag, to adorn our board room and keep the memory green. We had thought of presenting a federal flag as well, but on consideration we felt that this would be usurping the prerogative of the Federal Association.

"This flag like that of Nova Scotia is good heraldry. As in both cases, the colours of the original flag are reversed; consequently we have white fleurs-de-lis on a blue background. This is not a French flag, it is a provincial one, and as a resident of the Province whose family has lived there now for almost two centuries, I claim it as my provincial flag and not that of any particular group in the Province.

"Mr. Chairman, at the request of my colleagues of the Quebec Division, I would ask that you accept this flag on behalf of the parent body."

CANADIAN COMMISSION ON HOSPITAL ACCREDITATION

THE CANADIAN COMMISSION on Hospital Accreditation announces the appointment of Dr. Marcel Langlois as a field representative from April 1, 1956. The member organizations of the Commission are very fortunate to secure the services of one with the knowledge of hospital administration and the diversified professional experience which Dr. Langlois has. Dr. Langlois has a B.A. and M.D. from Laval University. He is certified in pædiatrics by the Royal College of Physicians and Surgeons of Canada. Among the positions he has held since graduation are: Foreign Assistant to the Faculty of Medicine, Paris, France; Head of the Pædiatric Service at l'Hôpital St-Sacrement; Professor of Pædiatrics at Laval University and at the University of Ottawa. Dr. Langlois has also served in the Department of National Health and Welfare, Ottawa. His most recent appointment was Director of l'Hôpital St-François d'Assise de Québec.

All those interested in and associated with the hospital accreditation program are pleased to welcome Dr. Langlois to his new field of activity, with the assurance that his contribution to this work will be most helpful.

Dr. Jean Jacques Laurier, who has been associated with the accreditation of hospitals pro-

gram in Canada, has tendered his resignation to the Canadian Commission on Hospital Accreditation. Increased responsibilities and a greater demand on his time as Assistant Medical Director, Hôpital du Sacré-Cœur, Cartierville, Quebec, necessitates this action. Dr. Laurier has been a field representative of the Commission since April 1954, when Canadians became more active in the accreditation program in Canada. His work has been greatly appreciated and he will be missed by the many friends he made while so creditably representing and upholding the requirements of accreditation and good patient care.

M.D. ARTISTS, PHOTOGRAPHERS INVITED TO TWELFTH PHYSICIANS' ART SALON

The Physicians' Art Salon Committee invites any Canadian physician or medical undergraduate to enter his work in the 1956 Salon to be held in the Château Frontenac, Quebec City, from June 11 to 15. This will mark the 12th year for this popular art and photographic feature of the annual C.M.A. Convention. It is sponsored by Frank W. Horner Limited, Montreal.

Conditions of Entry

The Salon structure will remain the same as last year. Entries will be accepted in three sections: (1) fine art; (2) monochrome photography; (3) colour photography.

The Fine Art Section is further subdivided into traditional, contemporary (modern), and portrait categories. There is no restriction on media; oil, tempera, gouache, water colour, charcoal, pencil, or dry brush are acceptable in each.

In Monochrome Photography, four entries may be submitted, but each exhibitor is limited to three entries in Fine Art, and Colour Transparencies, and any exhibitor may enter up to the limit in one or more sections.

There is no charge. All costs, including transportation to and from Quebec City, will be borne by Frank W. Horner Limited.

Judging of Awards

All acceptable entries will be displayed in the Salon and then judged for awards by a competent jury to be selected by the Art Salon Committee.

To Obtain Entry Forms

Any physician or medical undergraduate interested in submitting work may obtain an entry form with details by writing the sponsor at P.O. Box 959, Montreal. A short note or postcard will do. The entry form contains complete instructions on how to prepare and ship the entries.

Art Salon Calendar

A novel by-product of the Salon, the Physicians' Art Salon Calendar, will be prepared by Frank W. Horner Limited. The calendar reproduces award-winning work in full colour, and is distributed to all the physicians in Canada, with the compliments of the Company.

ABSTRACTS *from current literature*

MEDICINE

Osteoarthritis of the Cervical Spine.

J. G. Kuhns: *New England J. Med.*, 254: 60, 1956.

Osteoarthritis of the cervical spine is a common and very troublesome condition among older patients. While it is usually first manifested in old age, and is of slow progression, it may commence in middle age and progress rather rapidly. The basic pathological process is one of degeneration associated with aging, but mechanical stresses and endocrine disturbances are concerned with its progression.

The mechanical basis of the symptomatology is readily understood. The muscular spasm and stiffness are due to the over-stretching of the muscles and ligaments spanning the bony proliferations of the vertebral margins. Neurological symptoms arise from nerve root irritation or irritation of the cervical cord or sympathetic nerves, caused by narrowing of the neural foramina. Severe degeneration of the intervertebral disks may occur in the lower cervical region, but disk displacement rarely causes the neurological symptoms.

Cervical osteoarthritis is definitely benefited by treatment. Careful attention should be paid to the general condition of the patient, as marked improvement may result from the eradication of foci of infection, treatment of endocrine disorders and the correction of any abnormal physiological condition in the patient. Mechanical factors such as faulty posture likewise require correction. Great benefit will result from fitting the patient with a padded collar which conforms to the contours of the shoulders and jaw. This collar should be worn during the day until the symptoms subside. Physiotherapy in the form of heat is also of benefit. The patient should sleep on a firm mattress with a small pillow under the nape of the neck.

In advanced cases, where the symptoms are mainly neurological, cervical traction may be required in addition to neck support. Surgery may be necessary to relieve nerve pressure, with the removal of impinging bone.

No matter how far advanced cervical osteoarthritis may be, and no matter how severe the symptoms, pain and disability can be relieved in practically all cases. Medical supervision should continue for the remainder of the patient's life. Norman S. Skinner

The Sprue Syndrome.

J. C. S. Paterson: *Am. J. M. Sc.*, 231: 92, 1956.

The sprue syndrome comprises cœliac disease, non-tropical sprue and tropical sprue. Although the syndrome has long been recognized, its present incidence appears to be greater than was formerly suspected, probably as a result of increasing awareness of and interest in the condition, and recognition of latent sprue. A heredo-familial incidence is recognized. No single criterion serves to make a diagnosis. It is first suspected on clinical grounds and its establishment is aided by demonstrating excessive excretion of fat in the fæces, by radiology of the small intestine, and by hæmatological examination.

During the last 10 years there have been therapeutic advances of major importance, not only of themselves but also because they have helped to clarify the problem of pathogenesis. The long-recognized deleterious effect of carbohydrates in cœliac disease is now known to be an effect of the gluten fraction of wheat, rye and oats. The majority of patients with cœliac disease and some with non-tropical sprue respond to a gluten-free wheat diet. In other patients with non-tropical sprue refractory to treatment, dramatic remissions have followed administration of ACTH and cortisone, but relapse tends to occur on withdrawal of these hormones. In tropical sprue, clinical and hæmatological remissions are obtained with folic acid or folinic acid. Alone, these may not

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produce adequate hæmatological remission and require the addition of vitamin B_{12} or liver or yeast extract. A recent and interesting development is the effective remission produced by administration of antibiotic agents.

The sprue syndrome is complex by reason of the manifold signs of deficiency that may develop during its course. It is a clinical syndrome of intestinal malabsorption apparently initiated in several ways. In cœliac disease there appears to be a latent fundamental defect of fat metabolism in intestinal mucosal cells, a concept favoured by the heredo-familial incidence. Many examples of non-tropical sprue are old cases of cœliac disease, often refractory to treatment. In tropical sprue a deficiency of folic acid appears to cause megaloblastic anæmia and atrophic changes in the small intestinal mucosa. The fundamental defect in cœliac disease is aggravated by diets containing wheat gluten, and in tropical sprue possibly by rancid fat. Hypomotility of the bowel, stagnation of the intestinal contents and excessive mucus secretion further interfere with the absorption of many substances (which may already be poorly absorbed) and promote an exuberance of the intestinal flora of organisms. These, in turn, compete for the available B vitamins and the condition worsens in the manner of a vicious circle. S. J. SHANE

Studies on the Mechanism of Ventricular Activity. XVI. Activation of the Human Ventricle.

R. A. MASSUMI *et al.*: *Am. J. Med.*, 19: 832, 1955.

In this study, these investigators used ingeniously devised needle electrodes in 12 patients undergoing thoracotomy, to obtain direct intramural electrocardiographic records of the activation of the human ventricle. The results conflict in some essentials with classic theory, but are in accord with previous observations by the same group in similar studies on the dog, and with conclusions reached by other investigators. The procedure was completely harmless.

On the basis of their observations and analysis of their data, the following conclusions seem to be justified:

Tracings obtained from the subendocardium exhibit pure QS waves; the positive component of the depolarization complex is generated wholly or almost wholly in the outer myocardial layers. The subendocardium therefore appears to be electrocardiographically silent in respect to the genesis of positive depolarization potentials.

The "electrocardiographic silence" of the subendocardium explains why QRS complexes are not altered in pure subendocardial infarction and other conditions involving this portion of the myocardium. Pathological conditions involving the epicardial portion of the myocardium, such as inflammatory pericardial effusion and constrictive pericarditis, lower the amplitude of the R wave. Endocardial fibroelastosis encroaching upon the subendocardial myocardium and producing a situation comparable to constrictive pericarditis (the difference being in the location of the fibrous lining) causes very little if any QRS change. No clinical or prognostic inference can be drawn from the degree of R wave changes; rather prognosis must be based on the composite clinical picture.

The speed of impulse transmission through the human myocardial wall is not constant. It is very fast in the inner layers (the "silent zone") and of the order of 450 to 1,000 mm./sec. in the outer layers.

The subendocardium is also shown to be "sluggish" in generating injury potentials. While a given type of injury, for example injury produced by introduction of the plunge electrode in the outer layers, causes very marked S-T segment elevation, the same injury fails to produce any significant displacement of the S-T segment in the deeper layers. It follows from this and from the animal experiments done in this laboratory that profound injury to the subendocardial myocardium resulting from a variety of conditions, such as coronary insufficiency, myocardial infarction or certain types of acute endocarditis, does not give rise to significant quantities of injury potential, hence little or no S-T segment displacement. Injury to the outer myocardial layers, on the other hand, produces marked S-T segment elevation such as that seen in through-and-through myocardial infarction and acute pericarditis.

S-T and T changes commonly found in subendocardial injury may be due to certain functional alterations in the outer myocardial layers. The nature of these alterations has not yet been defined; it may be biochemical, resulting from the hæmodynamic changes ordinarily accompanying subendocardial injury. The S-T segment depression resulting from such biochemical changes is tentatively termed "primary epicardial S-T depression" to distinguish it from that type of S-T depression which is reciprocal to elevation on the opposite wall.

Under the conditions of these experiments T waves were positive in the majority of cases and flat to inverted in occasional cases. There seemed to be no gradient of potentials between repolarization forces present in the cavity, intramural layers and the epicardial surface in the majority of instances.

The presence of a normal or almost normal electrocardiogram in the face of clinical evidence of profound myocardial damage (acute or old) speaks in favour of subendocardial location of the myocardial lesion. Marked electrocardiographic changes, on the other hand, may or may not bear a quantitative correlation to the degree of myocardial infarction inasmuch as pronounced electrocardiographic changes can represent only minor subepicardial damage.

Caution must be exercised in inferring prognostic implications from the electrocardiogram alone. Consideration of the clinical picture remains of utmost importance.

Certain working criteria for the diagnosis of acute and old subendocardial myocardial infarction are suggested. S. J. SHANE

Influence of Sex Hormones on Circulating Lipids and Lipoproteins in Coronary Sclerosis.

M. F. OLIVER AND G. S. BOYD: *Circulation*, 13: 82, 1956.

There is considerable evidence that human coronary atherogenesis is influenced by sex. There is a striking sex difference in the incidence of the clinical manifestations of coronary sclerosis during the fourth and fifth decades. An analysis of 1,000 consecutive patients with clinical coronary disease indicated that it was 19 times more common in men than in women under the age of 40. Young men have lower alpha:beta lipoprotein ratios and a higher concentration of Sf 12-20 low density lipoproteins than young women; it is probable that this sex difference in lipoprotein concentrations depends to some extent on cyclical variations which occur during the menstrual cycle and may be related to endogenous œstrogen secretion. Morphological studies indicate that the physical characteristics of the very masculine and robust male are just those most commonly found to excess in subjects of coronary disease. The œstrogenic and androgenic sex hormones seem to be mutually antagonistic so far as the circulating lipids and lipoproteins are concerned, and the œstrogen-androgen balance may be of considerable importance in the development of clinical coronary disease. Whether alteration of this balance by œstrogens will result in retardation of the atherosclerotic process and, if so, whether belated control of this process is of any value once it has become manifest clinically, can only be determined by further investigation and assessment in terms of morbidity and mortality.

The administration of ethinyl œstradiol to men with myocardial infarction decreased the plasma total cholesterol, elevated the plasma phospholipids, thereby depressing the total cholesterol-phospholipid ratio, and decreased the concentration of cholesterol attached to the beta lipoprotein fraction. A daily dose of more than 200 μg. of ethinyl œstradiol was no more effective in its influence on the circulating lipids and lipoproteins and

was regarded as a disadvantage, as it was more readily associated with feminizing side-effects. Hexœstrol and œstradiol had a similar but less marked effect. Ethinyl œstradiol and methyl testosterone had a mutually antagonistic action on the circulating lipids and lipoproteins. Progesterone had no significant action on the circulating lipids and lipoproteins. Methyl testosterone and ethinyl testosterone failed to relieve the side-effects of ethinyl œstradiol administration.

The efficacy of ethinyl œstradiol administration in coronary disease must await assessment in terms of morbidity and mortality rates, rather than its ability to correct the abnormal circulating lipid and lipoprotein concentrations. S. J. SHANE

SURGERY

Pilonidal Sinus.

R. BREARLEY: *Brit. J. Surg.*, 43: 62, 1955.

A new theory of origin for pilonidal sinus is claimed. The various theories formerly presented—the preen gland, the medullary canal vestige and the inclusion dermoid—are criticized. The sinus is postulated to be due to surrounding hairs puncturing the skin, forming a short track. The hairs are "sucked in" after they are shed by movements of the buttocks rolling the skin about its attachment to deep fascia in the midline. The lesion starts after puberty, is much more common in males and in those with stiff body hair and has been found, though rarely, in the interdigital clefts, axilla and in amputation stumps, as well as in the sacrococcygeal area of the natal cleft. It is rare in blondes with soft hair and in negroes with curly hair.

Prevention of drilling by hair may be accomplished by epilation or depilatory creams or daily scrubbing after excision of the hair node. Treatment is as for the treatment of any chronic sinus: local excision with suture or open packing. BURNS PLEWES

Traumatic Diaphragmatic Hernia.

W. F. BUGDEN, P. T. CHU AND J. E. DELMONICO: *Ann. Surg.*, 142: 851, 1955.

In a city of 225,000, five cases of traumatic diaphragmatic hernia were seen in seven years. Of the four cases described, three were from automobile accidents and one man fell from a telephone pole. Delay in recognizing and treating the lesion results in increasing mortality; a high index of suspicion is advocated. The diaphragm should be repaired by thoracotomy. Phrenicolysis may be indicated when the defect is great.

Recognition may be difficult: there are evidences of disturbed cardio-respiratory physiology such as dyspnœa, cyanosis, tachycardia, and hypertension, together with mediastinal shift, persistent vomiting and signs of intestinal obstruction. Rupture of the diaphragm should be suspected when the left base of the diaphragm is higher than the right and when bowel sounds are heard in the chest. Fluoroscopy after the passage of a tube into the stomach is very helpful. BURNS PLEWES

Tuberculosis of the Breast.

G. SCHAEFER: *Am. Rev. Tuberc.*, 72: 810, 1955.

The incidence of tuberculosis of the breast compared to other mammary lesions at the New York Hospital in the past five years was 0.1% (incidence in the literature 0.5-1.4%). Tuberculosis of the breast is most prevalent between 20 and 50 years of age.

The breast is usually infected with tuberculosis by lymphatic spread from the axillary lymph nodes. It may also be involved by extension from contiguous structures in the chest wall. Parity, lactation, and trauma are not significant predisposing factors in the development of mammary tuberculosis. The most usual pathological type of breast tuberculosis is the nodular; sclerosing and atypical forms are less common.

A painless lump in the breast is the most frequent initial symptom, and any portion of the breast may be involved. The most common site is the upper outer quadrant. A non-tender nodular mass is usually the first sign; abscess formation and pain may occur later. The presence of fistulæ, retraction of the nipple, and enlarged axillary lymph glands is highly suggestive of tuberculosis.

Roentgenographic study of the breast may occasionally aid in the diagnosis. Complete bacteriological examination of material removed or aspirated from the breast may be of help.

Treatment should include a preoperative and postoperative course of antituberculous drugs and local excision of all tuberculous tissue, including axillary lymph nodes if present. If the diagnosis of tuberculosis is made postoperatively, the patient should receive a course of antituberculous drugs and be reoperated upon if all tuberculous tissue has not been initially removed.

The author reviews the rather sparse literature on this subject over the past 30 years, and adds 10 cases of his own. S. J. SHANE

Extradural Hæmorrhage: Factor Responsible for the High Mortality Rate.

R. C. SCHNEIDER AND J. S. TYTUS: *Ann. Surg.*, 142: 938, 1955.

The mortality rate of between 30 and 50% from extradural hæmatoma in large centres of the U.S.A. is due to several reasons. Physicians should be aware of the problem, and especially that it may occur after an apparently minor injury which may not cause unconsciousness. The significance of temporal lobe or tentorial pressure cone signs is emphasized: pressure on the third nerve with dilated pupil, downward and outward movement of the eye and ptosis of the lid and bilateral extensor responses. A patient may die within five minutes of apparently normal speech. Decerebrate rigidity pattern may result from extradural hæmorrhage. Leakage of cerebrospinal fluid may alleviate signs of increasing intracranial pressure. Posterior fossa hæmatomas should be suspected when there is an occipital contusion or a fracture across the transverse sinus in a patient who has a further impairment of consciousness. A supratentorial clot may extend into the posterior fossa. Other failures in treatment are cited.

This is a lesion which, if recognized and promptly and adequately treated, can be treated with success and with a good prospect of complete recovery.

BURNS PLEWES

PÆDIATRICS

Use of Gamma Globulin in the Treatment of Measles Encephalitis.

J. E. ALLEN AND D. J. FRANK: *Pediatrics*, 17: 78, 1956.

A study of 25 cases of measles encephalitis, 11 treated with massive doses of gamma globulin and 14 given supportive treatment only, leads the authors to conclude that gamma globulin is of little or no value as a therapeutic agent. Its field of usefulness lies in the prevention of this complication. None of the 25 cases occurred in the presence of measles that had been modified by gamma globulin. In the few cases that have been reported of encephalitis occurring during globulin-modified measles the illness was generally mild, and recovery the rule.

The modifying dose is 0.05 c.c./kg. if given before the sixth day after exposure: if later, the dose is doubled. The immunity conferred by modified measles is comparable to that following an unmodified attack.

I. J. PATTON

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Evaluation of Poliomyelitis Vaccination in Massachusetts.

A. S. POPE *et al.*: *New England J. Med.*, 254: 110, 1956.

A severe epidemic of poliomyelitis in Massachusetts, in 1955, due almost entirely to Type 1 virus, appeared shortly after mass inoculation with Salk vaccine, but appeared to have no causal connection. Among 22,673 children who had received 2 or more doses of vaccine, the attack-rate was 66.4 per 100,000: among 137,968 having received 1 dose, it was 94.5, and among 278,532 unvaccinated children, it was 198.2.

The over-all effectiveness of the vaccine was 53%: for paralytic cases only, it was 60%. I. J. PATTON

Acerola Juice—The Richest Known Source of Vitamin C.

N. W. CLEIN: *J. Pediat.*, 48: 140, 1956.

The agreeably tart juice of the West Indian cherry, or acerola, contains from 50 to 100 times as much vitamin C as orange juice. It keeps well, the vitamin content remaining undiminished if the juice (or jelly made from it) is stored in closed containers.

Thirty infants, aged 1 to 6 months (including several with allergic manifestations), were given acerola juice, as their only source of vitamin C, for 12 months. All grew and developed as well as the average child, some better; all were healthy and happy, and all had high vitamin C plasma levels.

No reactions occurred from ingestion of the juice. Skin and intradermal tests with acerola juice on 100 children, 50 of them known to be allergic, gave negative results. The author recommends that acerola juice, alone or mixed with apple juice, be given to infants with a personal or familial history of allergy. I. J. PATTON

ORTHOPÆDICS

Transplantation of Epiphyseal Cartilage.

P. A. RING: *J. Bone & Joint Surg.*, 37B: 642, 1955.

An extremely well-executed experimental study on epiphyseal cartilage in autogenous and homogenous transplantation is presented in this article. A group of animals receiving autogenous transplants was compared with a group receiving homogenous transplants. In each instance young rabbits were used, and the distal end of the ulna with the epiphyseal plate was transplanted from one side to the other in the autogenous method. In the homogenous transplantation, the animals were all litter mates and one ulnar epiphyseal cartilage was excised from one animal and transplanted into another. All technical details were carefully controlled. Observations were made by x-ray and later excision of the areas for microscopic study.

In 14 of the 20 limbs the growth of the autogenous graft exceeded that of the homogenous. In five of 18 animals, autogenous transposition was followed by normal growth. Homogenous transplantation was unsuccessful in all the animals studied. The microscopic studies suggested that homogenous grafting gives rise to an immunity reaction. The author thinks that these experiments were sufficiently well controlled and studied to warrant the conclusion that autogenous grafting of epiphyseal cartilage may have a limited surgical application, although there is no ready source of such cartilage in man. J. E. BATEMAN

Recurrent Dislocation of the Patella.

M. H. M. HARRISON: *J. Bone & Joint Surg.*, 37B: 559, 1955.

Over a hundred different operations have been described for recurrent dislocation of the patella. Recent reports have emphasized the necessity for excision of the patella in addition to correcting the alignment of the quadriceps apparatus. This paper describes in detail an operation which has been used at the Wingfield-Morris Orthopædic Hospital for 20 years, in which the extensor apparatus of the knee is re-aligned but the patella is retained. The operation described is essentially a transfer of the tibial tubercle with the ligamentum patellæ medial and distal to its original site. The importance of cutting the lateral patellar retinaculum and taking the incision through to the synovial membrane is stressed. Unless this is done, it is argued the direction of the pull of the quadriceps is not adequately corrected. The deficiency in the anterolateral part of the capsule may or may not be repaired. The leg is immobilized postoperatively in a long leg plaster cylinder for six weeks after the wound has healed. Some 30 operations of this type were performed, and the results have been assessed two to 20 years after operation.

In no instance was the patella excised, and the author emphasizes that patello-femoral osteoarthritis was not a complication in any of these patients. In four patients operated on before the age of 14, significant genu recurvatum occurred, and it is concluded that the realignment operation should not be performed under the age of 14 years. In only three of the operations was the recurrent dislocation not adequately controlled.

J. E. BATEMAN

INDUSTRIAL MEDICINE

Older People and Heavy Work.

R. M. BELBIN: *Brit. J. Indust. Med.*, 12: 309, 1955.

This paper presents data on suitable types of industrial work for older persons. Previous literature dating from 1933 is reviewed. A description is given of a recent investigation which was sponsored by the Human Factors Panel of the Committee on Industrial Productivity. Consideration is given to discrepancies which appear. The evidence indicates clearly that it is not uncommon for the heavy jobs in industry to be carried out by older workers.

The author first discusses age distribution of men and women employed on heavy work. He derives information from (1) a small-scale sample of operations personally studied, and (2) a more general analysis of occupations and ages listed in the 1951 census. In the sample of operations studied, there was a tendency for a larger proportion of persons in the late 40's, the 50's and the 60's to be engaged on heavy work than on light operations. Analysis of occupations and jobs listed in the 1951 census showed similar findings. He then deals with an intensive study of job change in a firm which included an unusually large proportion of heavy jobs. This firm manufactured batteries. In order to minimize any possible risks of lead poisoning, operators were periodically switched from one department to another and from job to job. Detailed records were kept of the jobs held by each worker throughout the year. Over 100,000 job cards were analyzed for 327 men employed on 34 operations. The operations were placed in five grades according to the degree of physical exertion required. Here too the same pattern was apparent, very heavy work tending to be carried out by older people and very light work by younger people. A lighter operation is likely to be one on which the emphasis will change demands from effort to speed.

Consideration is given to the interpretation of these findings and to various practical aspects. It appears that on light production work older people face serious competition with younger workers; on non-production work consisting typically of labouring and other heavy manual jobs, it is easy for them to find employment. In the author's opinion, the most progressive and far-reaching approach to the problem would rest with new plans and policies for training and retraining older workers. Improved skill of older workers would equip them for employment in later life. MARGARET H. WILTON

OBITUARIES

DR. GEORGE E. BINKLEY, 66, a New York cancer specialist, died of a heart attack on March 15 while on vacation in Jamaica. Born in Hamilton, Ont., Dr. Binkley graduated in 1914 from the University of Toronto. During World War I he served overseas as a captain in the Canadian Army Medical Corps. He went to New York in 1923. Until 1955 he was attending surgeon emeritus at the Memorial Center for Cancer and Allied Diseases.

Dr. Binkley is survived by a brother and a sister.

DR. QUARTUS BLISS, 54, a general practitioner in Kingsville, Ont., died on March 4. He was born in Compton, Que., and graduated in 1926 from Queen's University. He began general practice in Chippawa, Ont. in 1927. In 1929 he moved to Drayton, Ont. where he remained until 1934, when he went to Kingsville. He was in active practice until his death.

Dr. Bliss is survived by his widow and three sons.

DR. FREDERICK D. FACEY, 63, a former Provost, Alta., physician, died at his home in San Fernando, Cal., on February 11. A native of North Dakota, he graduated in medicine from McGill in 1920. After practising in Provost for two years, he went to California where he founded the Facey Medical Group.

Dr. Facey is survived by his widow, a son and a daughter.

DR. CARLOS LEROY FULLER, 69, prominent surgeon of Windsor, Ont., died on March 2 after a brief illness. Dr. Fuller, who was born at Essex, Ont., graduated from the University of Toronto in 1911. In 1914 he began practice in Windsor and in 1924 took postgraduate training in England under Sir Berkeley Moynihan and Sir Harry Stiles. The same year he received a fellowship in the American College of Surgeons and entered into extensive training at the Radium Institute at Pittsburgh. He pioneered in Windsor in the use of radium in the treatment of cancer.

Dr. Fuller is survived by his widow and two daughters.

DR. CAMPBELL M. McINTYRE, 62, assistant medical superintendent of Selkirk Mental Hospital, died on February 28 at Winnipeg General Hospital.

A native of Winnipeg, Dr. McIntyre was educated in the public schools, St. John's College, Brandon College and McMaster University. He graduated in medicine from the University of Manitoba in 1927 and spent two years on a fellowship in surgery at the Crile Clinic in Cleveland. On his return, he took up duties at Selkirk Mental Hospital. At Selkirk he took an active part in the life of the community. He was a member of the Canadian and American Psychiatric Associations and an active member of the Canadian, Manitoba and Winnipeg Medical Associations.

Dr. McIntyre is survived by his widow, a son and a brother.

DR. JAMES HEURNER MULLIN, 84, former coroner in Hamilton, Ont., and a co-worker with Sir Frederick Banting in diabetes research, died on March 11. Dr. Mullin was born in Hamilton and graduated from the University of Toronto in 1897, later doing postgraduate work in England and the United States. He was a specialist in obstetrics and pædiatrics.

An appreciation of Dr. Mullin will appear in our next issue.

DR. LILY NGAI, 50, wife of Dr. S. K. Ngai, died in Toronto on March 15 after a long illness. Born near Shanghai, Dr. Ngai graduated from Peiping Union Medical College in 1932. She then specialized in hæmatology research while working on a project related to diseases prevalent in China and India.

Dr. Ngai is survived by her husband, two sisters and a brother.

DR. ARMAND PARE, 67, Emeritus Professor of Surgery at the University of Montreal and member of the staff of the Hôtel-Dieu Hospital, died suddenly at his home on March 14. Dr. Paré was a graduate of the University of Montreal and went to Europe to continue his studies. These, however, were interrupted by World War I and on his return to Canada he joined the staff of Hôtel-Dieu as a surgeon. In 1923 he was appointed Professor of Surgery. In 1930 he became a member of the Royal College of Physicians and Surgeons of Canada.

Dr. Paré is survived by his widow and a son.

DR. FRANK K. PURDIE died at his home in Griswold, Man., on March 11, aged 69. He served overseas in the First World War with No. 2 Canadian General Hospital at LeTréport, and graduated in medicine from Manitoba Medical College in 1916. For two years he was assistant superintendent of Brandon Mental Hospital, and then moved to Griswold where he practised for 38 years. In 1942-43 he was president of the Manitoba Medical Association and in 1951 president of the College of Physicians and Surgeons of Manitoba. He was medical health officer for the Municipality of Whitehead and had a part-time position with the Department of Indian Affairs.

He is survived by his widow and two sons, Dr. F. Purdie and Dr. J. Purdie of Brandon.

DR. CLIFFORD H. REASON, 76, a London, Ont., practitioner, died on February 28. Born in London, Dr. Reason graduated from the University of Western Ontario in 1901. During World War I he served with the Canadian Army Medical Corps, returning to London in 1919. After the war he was sent on a diplomatic mission to the Near East and later went to Washington. Dr. Reason resumed private medical practice in London on his return. In 1952 he was elected to the Public Utilities Commission, subsequently serving as chairman in 1955.

Dr. Reason is survived by his two sisters.

DR. COLIN KERR RUSSEL, 79, a Montreal neurologist, died on March 4. Dr. Russel, a native of Montreal, was a graduate of McGill University. He took postgraduate courses at the Johns Hopkins Hospital, Baltimore, and in Switzerland, Germany, France and England. Dr. Russel served in both world wars, being attached to the Neurological and Orthopædic Hospital in Ramsgate, England, during World War I, and serving as consultant in charge of neuro-psychiatry with the rank of colonel during the Second World War. At the time of his death Dr. Russel was a member of several medical societies and chairman of the advisory committee of the Canadian Mental Health Association.

Dr. Russel is survived by his widow, two sons and a daughter.

DR. JOSEPH ARTHUR THIBOUTOT, 62, Director of the Christ-Roi Hospital, Verdun, Que., died on March 1. Dr. Thiboutot was born at Sainte-Anne-de-la-Pocatière and was a graduate of Laval University. After postgraduate study in Paris, he began practice in Montreal.

He is survived by his widow, a son and two daughters.

DR. JOSEPH HEPBURN. We regret to record the death in Toronto, Ont., of Dr. Joseph Hepburn on March 30. An appreciation will appear in our issue of May 1.

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FORTHCOMING MEETINGS

CANADA

ONTARIO MEDICAL ASSOCIATION, Annual Meeting, Royal York Hotel, Toronto. (Executive Secretary, Dr. Glenn Sawyer, O.M.A., 244 St. George Street, Toronto 5, Ont.) May 9-11, 1956.

CANADIAN TUBERCULOSIS ASSOCIATION, 56th Annual Meeting, Sheraton-Brock Hotel, Niagara Falls, Ontario. (C.T.A., 265 Elgin Street, Ottawa, Ont.) May 15-19, 1956.

CANADIAN PUBLIC HEALTH ASSOCIATION, 44th Annual Meeting, Admiral Beatty Hotel, Saint John, New Brunswick. (Dr. G. W. O. Moss, Honorary Secretary, 150 College St., Toronto 5, Ont.) May 29-31, 1956.

CANADIAN SOCIETY OF PLASTIC SURGEONS, Annual Meeting, Chantecler Hotel, St. Adèle, Quebec. (Secretary-Treasurer, Dr. J. A. Drummond, 1414 Drummond Street, Montreal 25, Que.) June 1-2, 1956.

CANADIAN PÆDIATRIC SOCIETY, Delawana Inn, Honey Harbour, Ontario. (President, Dr. J. H. Ebbs, The Hospital for Sick Children, 555 University Avenue, Toronto 2, Ont.) June 4-6, 1956.

CANADIAN OTOLARYNGOLOGICAL SOCIETY, Château Frontenac, Quebec, Que. (Dr. G. Arnold Henry, Secretary, 328 Medical Arts Bldg., 170 St. George St., Toronto 5, Ont.) June 6-7, 1956.

CANADIAN OPHTHALMOLOGICAL SOCIETY, 19th Annual Meeting, Chateau Frontenac, Quebec, Que. (Dr. R. G. C. Kelly, 90 St. Clair Avenue West, Toronto 7, Ont.) June 7-9, 1956.

CANADIAN UROLOGICAL ASSOCIATION, 12th Annual Meeting, Alpine Inn, Ste. Adèle, Quebec. (Dr. D. Swartz, Secretary, C.U.A., 332 Medical Arts Building, Winnipeg 1, Man.) June 7-9, 1956.

SOCIETY OF OBSTETRICIANS AND GYNÆCOLOGISTS OF CANADA—1956 Annual Meeting, Manoir Richelieu, Murray Bay, Quebec. (Dr. F. P. McInnis, Secretary, Society of Obstetricians and Gynæcologists of Canada, 1230 Avenue Road, Toronto, Ont.) June 8-10, 1956.

CANADIAN MEDICAL ASSOCIATION, 89th Annual Meeting, Ecole de Commerce, Quebec, Que. (Dr. A. D. Kelly, General Secretary, Canadian Medical Association, 150 St. George Street, Toronto 5, Ont.) June 11-15, 1956.

UNITED STATES

INTERNATIONAL ACADEMY OF PATHOLOGY, 45th Annual Meeting, Cincinnati, Ohio. (Central Office, Armed Forces Institute of Pathology, Seventh Street and Independence Avenue S.W., Washington 25, D.C.) April 24-25, 1956.

AMERICAN GASTROENTEROLOGICAL ASSOCIATION, Annual Meeting, Atlantic City, New Jersey. (The Secretary, A.G.A., University Hospital, Ann Arbor, Mich.) April 27-28, 1956.

AMERICAN GOITER ASSOCIATION, Drake Hotel, Chicago, Illinois. (Dr. J. C. McClintock, 149½ Washington Avenue, Albany, N.Y.) May 3-5, 1956.

MOUNT SINAI HOSPITAL OF GREATER MIAMI, Sixth Annual Seminar, Fontainebleau Hotel, Miami Beach, Florida. (Dr. Harold Rand, Chairman, 4300 Alton Road, Miami Beach, Fla.) May 17-20, 1956.

NATIONAL TUBERCULOSIS ASSOCIATION: AMERICAN TRUDEAU SOCIETY, Statler Hotel, New York, N.Y. (N.T.A., 1790 Broadway, New York 19, N.Y.) May 20-24, 1956.

CATHOLIC HOSPITAL ASSOCIATION OF THE U.S. AND CANADA, 41st Annual Convention, Milwaukee, Wisconsin. (C.H.A., 1438 South Grand Boulevard, St. Louis 4, Mo.) May 21-24, 1956.

FIRST INTERNATIONAL SYMPOSIUM ON VENEREAL DISEASES AND THE TREPONEMATOSES, Washington, D.C. (Dr. C. A. Smith, Division of Special Health Services, U.S. Public Health Service, Washington 25, D.C.) May 28-June 1, 1956.

THIRD NATIONAL CANCER CONFERENCE, Sheraton-Cadillac Hotel, Detroit, Michigan. (National Cancer Conferences Coordinator, American Cancer Society, 521 West 57 Street, New York 19, N.Y.) June 4-6, 1956.

AMERICAN COLLEGE OF CHEST PHYSICIANS, 22nd Annual Meeting, Hotel Sherman, Chicago, Illinois. (Executive Offices, A.C.C.P., 112 East Chestnut Street, Chicago 11, Ill.) June 6-10, 1956.

AMERICAN MEDICAL ASSOCIATION, Annual Meeting, Chicago, Illinois. (Dr. George F. Lull, 535 North Dearborn Street, Chicago 10, Ill.) June 11-15, 1956.

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY, 10th Annual Meeting, Claridge Hotel, Atlantic City, New Jersey. (Dr. W. T. Liberson, Secretary, E.E.G., V.A. Hospital, Northampton, Mass.) June 15-17, 1956.

WORLD CONFEDERATION FOR PHYSICAL THERAPY, Second International Congress, New York, N.Y. (Canadian Physiotherapy Association, 8 Bedford Road, Toronto 5, Ont.) June 17-23, 1956.

SECOND INTERNATIONAL CONGRESS ON PHYSIOTHERAPY, New York, N.Y. (Miss M. Elson, American Physical Therapy Association, 1790 Broadway, New York, N.Y.) June 17-23, 1956.

SOCIETY OF NUCLEAR MEDICINE, Hotel Utah, Salt Lake City, Utah. (Secretary, Dr. R. G. Moffat, 2656 Heather Street, Vancouver 9, B.C., Canada.) June 21-23, 1956.

OTHER COUNTRIES

INTERNATIONAL UNION FOR PUBLIC HEALTH EDUCATION, Third Conference, Rome, Italy. (M. Lucien Viborel, Secretary-General, 92 rue St. Denis, Paris Ier, France.) April 27-May 5, 1956.

NINTH WORLD HEALTH ASSEMBLY, Geneva, Switzerland. (World Health Organization, Palais des Nations, Geneva.) May 9, 1956.

INTERNATIONAL FERTILITY ASSOCIATION, SECOND WORLD CONGRESS, Naples, Italy. (Prof. G. Tesauro, President of Committee Arrangements, S. Andrea delle Dame, 19, Naples.) May 18-26, 1956.

FIRST EUROPEAN SYMPOSIUM ON VITAMIN B_{12}, Hamburg, Germany. (Dr. H. C. Heinrich, Physiologische-chemisches Institut, 52 Martinistrasse, Hamburg 20.) May 22-26, 1956.

INTERNATIONAL SOCIETY FOR THE STUDY OF INFECTIOUS AND PARASITIC DISEASES, First International Congress on the Pathology of Infectious Diseases, Lyons, France. (Professor Sedallian, I.S.S.I.P.D., 77 rue Pasteur, Lyons.) May 24-26, 1956.

INTERNATIONAL MEDICO-ATHLETIC FEDERATION, 11th Congress, Buergenstock, Switzerland. (Dr. G. Schoenholzer, Secretary-General, Bluemlisalpstr. 7, Muri-Berne, Switzerland.) May 29-June 1, 1956.

THIRD INTERNATIONAL SCIENTIFIC CONFERENCE ON RHEUMATISM, Aix-les-Bains, France. (M. Graber-Duvernay, 6 rue de Liége, Aix-les-Bains.) June 28-July 1, 1956.

BRITISH MEDICAL ASSOCIATION, Annual Meeting, Brighton, England. (The Secretary, B.M.A. House, Tavistock Square, London, W.C. 1, England.) July 5-13, 1956.

FIFTH INTERNATIONAL CONGRESS ON GASTROENTEROLOGY, London, England. (Mr. Hermon Taylor, 14 Upper Harley Street, London W.1.) July 18-21, 1956.

SIXTH INTERNATIONAL PÆDIATRIC CONGRESS, Copenhagen, Denmark. (Dr. J. Vesterdal, Domus Medica, Kristianiagade, Copenhagen.) July 22-27, 1956.

PROVINCIAL NEWS

SASKATCHEWAN

During 1955 the Division of Health Education of the Department of Public Health of Saskatchewan distributed a total of 533,453 pieces of literature as compared with 392,815 in 1954. Much of this distribution was in response to requests; the remainder was related to current health education programs.

Among the out-of-province speakers who will be present at the Cancer Symposia to be held in Regina during May will be Dr. Irving M. Ariel, co-editor with Dr. George T. Pack of the monumental treatise on cancer entitled "Treatment of Cancer and Allied Diseases"; Dr. David W. Molander, a staff member of the Memorial Hospital and internist in the Pack Medical Group, New York; Dr. Claude R. Hitchcock, who has been closely associated with Professor Wangensteen at the University of Minnesota in the study of more radical surgical procedures in the treatment of certain malignant diseases of the gastrointestinal tract; Dr. Victor Sborov, formerly of the Metabolic and Liver Laboratories at the Walter Reed Hospital, Washington, and Dr. Neil E. McKinnon of the School of Hygiene and the Connaught Medical Research Laboratories, University of Toronto.

Plans are being made in Swift Current, Saskatchewan, to build an addition to the Swift Current Union Hospital. The expansion is expected to cost $316,000. Also planned is a nurses' residence at a cost of $271,000.

Tentative plans for the 1956 poliomyelitis vaccine program in Saskatchewan were recently announced by the Department of Public Health.

It is expected to complete the immunization of those children born in 1949, 1950 and 1951 who received two doses of the Salk vaccine last year. On the basis of the anticipated supply of vaccine, children in additional age groups will also be vaccinated. Two doses will be given to those born in 1946, 1947 and 1948, as well as those born in 1952, 1953 and 1954. As in the past, priority will be given to those age groups in which the incidence of poliomyelitis has been highest.

The number of children to be vaccinated this year will depend on the quantity of vaccine available. If the volume of production is up to expectations, older age groups will also be included in the program. Plans will be finalized for the 1956 program upon the receipt of supplies of poliomyelitis vaccine, anticipated by the end of May.

The Hon. T. J. Bentley, Minister of Public Health for Saskatchewan, has recently announced federal approval of national health grants totalling $5,550.50 to assist five Saskatchewan hospitals to provide or add to physical therapy equipment. Amounts approved were: Victoria Hospital, Prince Albert, $1,711.50; Saskatoon City Hospital, $850; St. Paul's Hospital, Saskatoon, $1,512; Providence Hospital, Moose Jaw, $600; and the Regina General Hospital, $877.

Approval of grants to assist Union Hospital Boards at Wynyard and Wadena to improve facilities has also been announced. A grant of $5,000 will be made to the Wynyard Union Hospital towards the estimated cost of $25,000 for the conversion of a former R.C.A.F. building into a residence for nurses. The home is to accommodate ten nurses.

A grant of $1,750 will be made to the Wadena Union Hospital Board to assist in the expansion of service areas. Matching federal grants will be sought in both cases.

The number of hospital admissions in Saskatchewan has varied little in the last three years, reflecting the possibility that a stable level has been reached, according to officials of the Saskatchewan Department of Public Health. The Annual Report of the Department's Hospital Services Plan showed 165,267 hospital cases for 1955, as against 165,172 for 1954 and 165,262 for 1953.

The Hospital Care Insurance Plan covered 92.6% of the "between-census" estimated population of 889,000. However, the covered population total was estimated to represent more than 97% of the number of people requiring or eligible to be beneficiaries. The total number of persons covered increased by 12,710 in 1955.

Expenditures of the plan totalled $19,309,501, of which 96.3% or $18,603,488 went to payment of hospital bills for beneficiaries. Administration costs amount to 3.7% of the total. The per capita cost of the Government's Hospital Insurance came to $23.46 for the year. This administration expense included commission paid tax collectors.

Total revenue in 1955 from hospitalization, taxes and other sources amounted to $8,897,457, an increase of $99,139 over the previous year which was attributed to increased population.

The report showed how this revenue amounted to $4.85 per capita in 1947, the year the plan was introduced, and to $10.81 per capita in 1955. It also showed that in 1947 the revenue was sufficient to pay one-half the plan's expenditures, whereas in 1955 it was enough for 46%. This is varied from year to year.

For a number of years the plan paid for a hospital bill for one person out of six, but taking into account multiple admissions, it meant in reality one hospital bill each year for every five persons. About one taxpayer in every three is concerned with hospitalization for himself or his dependents during the year.

Three-quarters of the total number of cases involved hospital stays of 10 days or less, but the remaining one-quarter of the patients needed about 65% of the days of patient care. It was noted that city people stayed in hospitals longer than people from smaller centres and that the stays of the rural people were the shortest of all.

Maternity cases and complications of pregnancies were again the principal cause of hospitalization in Saskatchewan during 1955. Those patients represented 18.6% of all discharged cases. Accidents including poisonings and injuries resulting from violence accounted for 8% of all discharged persons, and were the second most important cause of hospitalization. In third place were patients with conditions of the thorax, tonsils and adenoids, providing slightly more than 6% of the total hospitalization load. In comparison with 1954 there was a 19% decrease in this type of discharge. A slight decrease was noted in patients with appendicitis, 216 fewer with this diagnosis having been discharged in 1955. Diseases of the gallbladder and bile ducts dropped from 7th to 11th place, while cancer cases came up from the 12th to the 10th position, showing an increase of 10% over 1954. Diagnosis of degenerative heart diseases accounted for an increase of 491 cases.

G. W. PEACOCK

MANITOBA

The Winnipeg Medical Society met in the Red Cross Lodge of Deer Lodge Military Hospital on February 17. A well-arranged and very interesting scientific exhibit was staged by members of the Deer Lodge staff. In all there were 30 exhibits. These ranged from the Guiarino artificial kidney in operation, to photomicrographs of prostatic biopsies on 300 consecutive patients over 50 years of age. An exhibit showing planing of the skin to remove acne scars and wrinkles attracted much attention. The prostatic biopsies showed that occult carcinoma of the prostate was seven times more common than clinically recognized carcinoma.

Dr. Ross Mitchell addressed the Medical Students' Association in the new auditorium of the Medical Col-

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lege on February 24. His topic was "Then and Now", the story of the Manitoba Medical College.

Dr. Colin Ferguson was the guest speaker at a clinico-pathological conference in the Maternity Pavilion of the Winnipeg General Hospital on February 28. His topic was neonatal surgical emergencies.

Dr. I. M. Thompson spoke at the Medical History Section of the Winnipeg Medical Society on February 22 on "The Last Days of Ian McLaren".

On March 26 at the Medical College Auditorium the Committee for Post Graduate Studies, Faculty of Medicine, University of Manitoba, together with Baxter Laboratories, sponsored a symposium on "Practical Aspects of Water and Electrolyte Therapy." The guest speakers were Dr. William E. Abbott, Cleveland; Professor John A. Anderson, Minneapolis; Dr. Martin Hoffman, Montreal; Dr. Sidney Israels and Dr. Ashley Thomson, Winnipeg.

The annual refresher course of the Faculty of Medicine, University of Manitoba, was held on March 27, 28 and 29. The guest speakers were Professor John A. Anderson, Department of Pædiatrics, University of Minnesota; Dr. Martin Hoffman, Department of Medicine, McGill University; Prof. A. D. McLachlin, Department of Surgery, University of Western Ontario, and Professor W. Ian C. Morris, Department of Obstetrics and Gynæcology, University of Manchester, England. On the evening of March 29 Prof. Linus C. Pauling, Nobel Laureate 1954, Professor of Chemistry, California Institute of Technology, gave the Merck Lecture on "Abnormal Hæmoglobin Molecules in Relation to Disease".

The annual meeting of Manitoba Medical Service was held on March 20, with Dr. P. H. T. Thorlakson presiding. The balance sheet showed assets of $1,163,105.86 and liabilities of $888,939.06. The chairman stated that 53% of the people of Greater Winnipeg and 26% of the people of Manitoba were protected by Manitoba Medical Service. The officers elected were Dr. W. F. Tisdale, President; Dr. P. H. McNulty, Vice-President; Dr. Sam Boyd, Secretary; Mr. Morris Neaman, Treasurer. These four with Dr. A. Hollenberg and Mr. J. R. Stuart form the executive.

Professor John A. Anderson, head of the Department of Pediatrics, University of Minnesota, addressed the Winnipeg Medical Society on March 27 on "Poliomyelitis, Past, Present and Future".

The full Court of Appeal of Manitoba has recently accepted blood tests as evidence in paternity suits. In a case which came before the Appeal Court, Dr. D. W. Penner, Assistant Professor of Pathology, and Dr. Georgina Hogg gave evidence that a man whose blood group on three separate occasions was found to be AB could not be the father of a child whose blood group, also trebly tested, was found to be O. Mr. Justice Schultz in delivering the opinion of the Court accepted this view.

ROSS MITCHELL

ONTARIO

We regret to announce the death of Mr. Aubrey A. Brown, 56, of Toronto, the executive secretary-treasurer of The Canadian Foundation for the Advancement of Pharmacy. Mr. Brown, who had guided the operation of the Foundation since 1947, was born in Burks Falls, Ont., the son of the late Rev. and Mrs. E. R. Brown. He was well known across Canada for the work he did in connection with the Foundation on behalf of which he travelled widely.

NEW BRUNSWICK

At Plaster Rock a 25-bed hospital is to be constructed. It will be named "The Tobique Valley Hospital". The funds for this hospital have been raised by community effort supplemented by a government grant and a most generous donation from the Fraser Companies, Limited.

Dr. A. M. Clarke, Director of the Moncton Hospital, reports that it is proposed to erect a nurses' home for the Moncton institution, planning for which is now under way. Although this hospital is only three years old, it is already faced with a waiting list for admission.

The construction of the New St. Joseph's Hospital in Saint John is progressing favourably, and the Board of Directors will shortly launch an appeal for $500,000 to equip and furnish the building.

The Saint John Medical Society's program for its fourth Spring Clinical Session was held on March 14-16. Guest speakers were: Dr. K. J. R. Wightman, Associate Professor of Medicine and Therapeutics, University of Toronto; Dr. Carleton R. Souders of the Lahey Clinic, Boston; and Dr. Daniel J. Tonning, Associate Professor of Medicine, Dalhousie University.

Dr. K. J. R. Wightman spoke on: (1) Thrombocytosis. Discussion, Dr. H. H. MacKinnon; (2) Anæmia—Investigation in an Adult. Discussion, Dr. F. H. George; (3) Modern Treatment of the Malabsorption Syndrome. Discussion, Dr. D. J. Tonning; (4) Advances in Treatment of Leukæmia, Lymphomatosis, etc. Discussion, Dr. J. A. Caskey. He also took part in a clinico-pathological conference.

Dr. C. R. Souders spoke on: (1) Differential Diagnosis of Chest Pain. Discussion, Dr. A. B. Walter; (2) Bronchiectasis. Discussion, Dr. L. MacPherson; (3) Bronchiogenic Carcinoma. Discussion, Dr. Geo. Skinner.

Dr. D. J. Tonning spoke on: Enteral Feeding and Intestinal Decompression. Discussion, Dr. H. J. Rosen and Dr. T. E. Grant.

Dr. N. W. MacLellan spoke on: The Bronchi and Lungs as a Source of Dyspnœa. Discussion, Dr. C. Souders.

Dr. J. L. Guravich spoke on: Familial Hypercholesterolæmia, and Dr. Arnold Branch on Present Status of Staphylococcus Infections. Discussion, Dr. R. A. H. Mackeen.

On Wednesday and Thursday the sessions were held in the auditorium of the Provincial Laboratories and on Friday in the auditorium of Lancaster D.V.A. Hospital. Dr. G. W. A. Keddy, President of the Saint John Medical Society, was general chairman, assisted by Dr. A. L. Donovan, Dr. W. J. Murphy, Dr. A. B. Walter and Dr. I. A. Karrel.

The sessions were followed by a supper dance on Friday evening at the El Belgrano Lodge.

These Spring Sessions are sponsored by the Post-Graduate Department of Dalhousie University and the New Brunswick Medical Society. The local committee responsible this year was: Dr. J. A. Finley, chairman; Dr. H. Tonning; Dr. K. C. Rodger; Dr. F. L. Whitehead; Dr. H. B. Parlee and Dr. S. D. Clark.

Dr. J. A. MacDougall of Saint John has been re-elected chairman of the Board of Directors of the Maritime Hospital Service Association at their annual meeting in Moncton. Dr. D. A. Thompson is the other medical representative of New Brunswick on the Board.

Dr. J. A. Melanson, Chief Medical Officer for New Brunswick, announced at the meeting of the superintendents of provincial sanatoria that in 1955 there had been a 24% increase in the number of patients admitted to these tuberculosis hospitals over the admissions in

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1954, chiefly due to the increased interest of the case-finding agencies. The death rate for tuberculosis had dropped from 8.8 per 100,000 for 1954 to 8.0 for 1955.

Col. John Barr was the guest speaker at the meeting of the New Brunswick Branch Defence Medical Association dinner held in Saint John on Friday, March 9. Out-of-town guests included Dr. J. A. Melanson of Fredericton and Dr. G. E. Maddison. A. S. KIRKLAND

NOVA SCOTIA

Dalhousie University is pleased to announce the appointment of Dr. Antoni Trias, a graduate of the University of Barcelona, Spain, as Assistant Professor of Anatomy. Prior to his arrival here Dr. Trias was engaged in postgraduate study at Oxford University, England.

Dr. F. W. Fife of Aberdeen, Scotland, has been appointed Associate Professor of Anatomy at Dalhousie University.

On February 22, a cornerstone for a new Medical Building at New York University was laid by Dr. Luther B. MacKenzie, retired professor emeritus of New York University and a former teacher of Dr. Jonas Salk, the discoverer of the poliomyelitis vaccine. Since his retirement from his University, Dr. MacKenzie has been living at his home in Bedford, Nova Scotia, his native province.

Dr. Fred J. Barton of Dartmouth recently underwent an operation at Boston, Mass., for a surgical condition of the chest. We are glad to learn that he is convalescing normally, in Florida. We are all looking forward to his early return to our Medical Centre.

Dr. John G. D. Campbell, Senior Pensions Medical Examiner for the Newfoundland District of the Canadian Pensions Commission, was a recent visitor in our city.

A two-day symposium in dermatology has just been completed by the Post-graduate Committee of Dalhousie University. The special speaker was Dr. L. P. Ereaux of Montreal, well-known Canadian dermatologist.

Drs. A. L. Murphy and E. F. Ross attended the recent meeting of the American College of Surgeons in Philadelphia.

During the Royal Visit to West Africa the Queen invested Dr. Leslie McLetchie, O.B.E., M.B., Ch.B., D.T.M. & H., C.P.H., a Companion of the Most Distinguished Order of St. Michael and St. George. Dr. McLetchie is a brother of our provincial pathologist.
W. K. HOUSE

BOOK REVIEWS

RHEUMATOID ARTHRITIS AND PSORIASIS VULGARIS. Internal and Cutaneous Manifestations of the Permanent Endoparasitism in the Homo Sapiens. Their Common Etiology, Pathogenesis, and Specific Vaccine Therapy. T. Benedek, Assistant Clinical Professor of Dermatology and Syphilology, Stritch School of Medicine, Loyola University, Chicago. 308 pp. Illust. Chicago Medical Book Company, Chicago, 1955.

In this text the author proposes a common etiology for rheumatoid arthritis and psoriasis vulgaris, which he attempts to explain on the basis of a bacterial allergy to a "permanent endoparasite" of man. The organism is described as a pleomorphic, aerobic, Gram-positive, spore-bearing bacillus, resembling or identical with *B. subtilis* and *B. cereus*. The claim is made that it constantly infects every human being and is passed from mother to child through the placenta. This organism he has chosen to call *B. endoparasiticus* Benedek (1927).

The author recommends as treatment for these diseases the use of a killed vaccine of the organism in a highly critical dilution. In a group of 25 cases of mixed arthritis, such treatment is stated to have resulted in either marked improvement or complete arrest of the disease in all but one patient, over a period of 3 to 18 months, although analysis of the individual protocols of the patients would indicate that considerable residual disability persisted.

The author is primarily a dermatologist but became interested in the vaccine treatment of rheumatoid arthritis when he himself developed the disease at the age of 56 years. Other diseases in addition to the two mentioned are stated to result from this endoparasitism, including pompholyx, pityriasis rosea, seborrhœic dermatitis, hidradenitis suppurativa and sycosis vulgaris.

The evidence for these claims is not convincing nor are they substantiated by control studies. The book makes for interesting reading but can hardly be recommended as a text for students in medicine.

NEUROGLIA, MORPHOLOGY AND FUNCTION. P. Glees, University Demonstrator and Lecturer in Physiology, University Laboratory of Physiology, Oxford University. 111 pp. Illust. Charles C Thomas, Springfield, Ill.; The Ryerson Press, Toronto, 1955. $6.00.

This book, written by an authority on the subject, is an exposition, in summary, of the literature relating to neuroglia. It is valuable because the evidence from all sources is recorded and the interpretation of that evidence by the different workers is set down with impartial rectitude. This small volume will be required at least by neurohistologists and neuropathologists. There are some 250 references.

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LOCAL ANALGESIA, HEAD AND NECK. Sir Robert MacIntosh, Nuffield Professor of Anæsthetics, and M. Ostlere, Research Assistant, Nuffield Department of Anæsthetics, University of Oxford, England. 138 pp. Illust. E. & S. Livingstone Ltd., Edinburgh and London; The Macmillan Company of Canada, Toronto, 1955. $4.70.

There appears to be a growing tendency to publish monographs at the present time. This, one feels, is due to ultraspecialization and to the wider and more rapid development of topics which formerly took up a chapter in the standard textbook. There also seems to be an increasing demand for this type of literature which is much less expensive than the encyclopædic type of volume and usually more informative in its own circumscribed field. Such a monograph holds an intermediate position between an article in a journal and a textbook.

There is now a tetralogy of books on conduction anæsthesia written by the senior author of the book under review, in collaboration with various first assistants. Those on lumbar puncture and spinal anæsthesia, local analgesia for abdominal surgery, and local analgesia induced by brachial plexus block have already had a wide circulation.

The fourth, which is perhaps the best so far written, describes local analgesia for operations on the head and neck. The procedures mentioned are the common and practical ones currently in use at Oxford. The descriptions and illustrations are developed from this work, and repetition from previous books is absent.

The anatomical study necessary for this type of work is discussed in a practical manner. It is adequate, yet as brief as possible.

The book is simply and originally illustrated, with little reference to central neuroanatomy. The techniques described provide analgesia for operation on or examination of the nose and air sinuses, the tonsils, larynx, bronchi, teeth, eyes and the head. The description is again straightforward and practical. Specific blocks of the cervical plexus, the vagus, the stellate ganglion and the divisions of the trigeminal nerve are described by virtue of the part they play in producing analgesia for various operations.

The technical part of this monograph is not encumbered by numerous alternative approaches; it appears only to describe the methods found to be of most value in the authors' hands.

It is well worth studying by those interested in anæsthesia, including those surgeons operating upon the areas under discussion who, by custom or circumstance, induce analgesia for their patients as well.

ANESTHESIA IN OPHTHALMOLOGY. W. S. Atkinson, Associate Clinical Professor of Ophthalmology, New York University Post-Graduate Medical School, New York. 101 pp. Illust. Charles C Thomas, Springfield, Ill.; The Ryerson Press, Toronto, 1955. $3.50.

In the experience of the reviewer this monograph represents the first time that a complete discussion of local anæsthesia in ophthalmology has been produced in book form. Up to the present, those studying this subject have had to read separate articles and several textbooks in order to cover it adequately. The author, who is a recognized authority in this field, has rendered his specialty a great service in collecting the available information in one place. The presentation is at once comprehensive, highly descriptive, concise and readable. The various anæsthetic procedures are fully discussed and evaluated by the author. He has supplied numerous excellent illustrations, which complement the text excellently. Considerable use is made of semi-humorous cartoons to drive home certain points. This certainly is a departure from the usual practice when presenting scientific treatises and its good taste may be questioned by some, but there is no gainsaying its effectiveness.

The reviewer has no hesitation in highly recommending this monograph. It should be in the libraries of all hospitals doing ophthalmic surgery. Ophthalmologists young and old will find it invaluable.

OBSTETRICAL ANESTHESIA, ITS PRINCIPLES AND PRACTICE. B. B. Hershenson, Director of Anesthesia, Boston Lying-in Hospital, Massachusetts. 403 pp. Illust. Charles C Thomas, Springfield, Ill.; The Ryerson Press, Toronto, 1955. $11.50.

This book not only covers the subject suggested by its title but also explains the principles of anæsthesia in a wider field. A more appropriate title would be "The Principles and Practice of Anæsthesia with Special Reference to Obstetrics".

The author opens with a brief historical sketch while subsequent introductory passages to many sections are based on the same principle. Chapters of special interest are those on the theories and mechanism of labour pain and on asphyxia neonatorum.

The physiological derangements of pregnancy together with concurrent and intercurrent conditions are discussed as they affect the choice and administration of anæsthetic drugs. The influence of Clement A. Smith and that of Franklin F. Snyder is evident.

General and regional anæsthesia are discussed fully, concerning both the drugs used and the techniques of their administration. The author sets out the indications for and contraindications to their employment in obstetrics.

Although this book is excellent, it would have been of additional value had a specific chapter on the toxæmias of pregnancy and their management been added, because not infrequently an anæsthetist is called upon to play an important role in the handling of these patients.

Its importance would likewise have been enhanced had a chapter on Cæsarean section been included instead of allusions made to this operation here and there.

The book is well written and well illustrated. It should prove an asset to both the specialist and the part-time anæsthetist.

MODERN TRENDS IN OBSTETRICS AND GYNECOLOGY, Second Series. Kenneth Bowes, Obstetric Physician, St. Thomas's Hospital, London. 407 pp. Illust. Butterworth & Co., Ltd., London, 1955. $13.50.

In our present state of knowledge, when to cover adequately a subject such as obstetrics and gynæcology needs several volumes, the value of the standard textbook remains in its ability to provide a non-controversial skeleton for the medical student. The journals produce a spate of articles often too specialized and occasionally containing ill-supported claims and deductions.

As a result, volumes of the "Recent Advances", "Modern Trends", and "Progress in" type are now very essential additions to the academic and practical field of the specialty. Their purpose is to steer a middle course. Each subject is discussed, it is hoped, in a balanced way by an acknowledged expert. Real advances in the past decade, i.e. in advance of the textbook, but often well behind the premature claims of the journals, are consolidated.

The purpose of the preamble is to state that the volume under review, while a companion to the first volume, stands in its field as one of the best of this kind. The subjects covered are topical and interesting. The opinions are authoritative and mostly correspond to present-day accepted standards. Controversy, however, occasionally creeps in.

The theoretical deduction from the experimental animal in Harold Burrows's chapter on "The Influence of Œstrogens on the Formation of Uterine Tumours" contrasts unfavourably with the solid clinical basis of McBride's "The Post-Menopausal Endometrium", particularly with reference to the etiology of endometrial cancer.

The chapters by P. M. F. Bishop on "Rare Causes of Amenorrhœa" and that increasingly important topic "Premenstrual Tension" are excellent. The article on the "Use of Forceps in Modern Obstetrical Practice", by T. N. A. Jeffcoate, and that by Ian Donald "On the Establishment and Maintenance of Respiration in the Newborn", are to this reviewer worth the price of the book. The format is excellent, but the photomicrographs could be improved.

In conclusion this book is very highly recommended as a comprehensive survey of recent advances.

THE HEMORRHAGIC DISORDERS. A Clinical and Therapeutic Approach. M. Stefanini, Director of Research Laboratories and Hematologist, Saint Elizabeth's Hospital, Boston, and W. Dameshek, Senior Physician and Director, Blood Research Laboratory, New England Center Hospital, Boston. 368 pp. Illust. Grune & Stratton, New York and London; The Ryerson Press, Toronto, 1955. $13.00.

This book's stated aim is a practical one, the larger part being devoted to description of the clinical features of the bleeding disorders. The first chapter deals with the normal hæmostatic process, and emphasizes the importance of the vascular, platelet and fibrinolytic mechanisms as well as the coagulation mechanism. A great amount of new information on these mechanisms has accumulated in recent years, and various workers have used different terms to identify what often turns out to be the same substance. Out of the resulting confusion the authors have set forth a working hypothesis, which is made reasonably understandable with the aid of diagrams. There is a useful table of synonyms.

There follows a chapter on classification of hæmorrhagic diseases, and then 10 chapters each dealing with one group of diseases. The thrombocytopenic states are dealt with at greater length than the others, in 54 pages, whereas hæmophilia and related disorders are allowed only 23 pages. This is quite proper in view of the relative frequency of these disorders, our knowledge of them, and available treatment. Other chapters deal with the complex bleeding tendency in leukæmia, polycythæmia and liver disease, circulating anticoagulants, "fibrinolytic purpura", the bleeding tendency of obstetric accidents and the bleeding tendency of dysproteinæmias. The text is supplemented with numerous tables, diagrams and case histories demonstrated graphically. There is an appendix which describes the techniques in detail and a bibliography of 753 references and an index. The book is a thoroughly up-to-date reference more suited to the internist and the hæmatologist than to the undergraduate medical student. It is recommended for all medical libraries.

L'HEREDITE EN MEDECINE (Heredity in Medicine). Characteristics, Diseases, Correlations. A. Touraine, Member, l'Académie de Médecine. 876 pp. Illust. Masson et Cie., Paris-VI, 1955. 6,400 fr.

This book gives a good account of what one needs to know about genetics as applied to human medicine.

The principles of general genetics are described in a simple and condensed form in the first 150 pages. The remaining 650 pages are devoted to the study of applied genetics. Some 1,200 abnormal hereditary characteristics are known and described as disease syndromes or states. These are studied under the following headings: (1) general hereditary dispositions; (2) hereditary diseases of ectodermic origin; (3) those of endodermic origin; (4) those of mesodermic origin. The general plan of description is the same for all diseases. There is a brief account of the clinical manifestations, and the modalities of transmission are discussed and illustrated. The results of studies of twins are enumerated, and finally an excellent bibliography from 1940 to 1955 is given at the end of each disease or syndrome. This book will be very useful for the physician and student alike as an easy reference for condensed knowledge. It is not intended as a long treatise.

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THE PEDIATRIC YEARS. L. Spekter, Director, Bureau of Maternal and Child Hygiene, Connecticut State Department of Health, Hartford. 734 pp. Illust. Charles C Thomas, Springfield, Ill.; The Ryerson Press, Toronto, 1955. $13.75.

This book is written for non-medical people who work with children, such as social workers, public health nurses, nutritionists, dietitians, health educators, camp directors, and school supervisors, to give them a better understanding of the medical aspects of both the normal and ill child so that they can more adequately carry out their important functions in assisting in the care of these children. It covers the health of the expectant mother, the development of the well child, and most of the diseases of childhood with emphasis on those which are of more importance to the social worker and other lay people caring for children. It also covers the standards of qualification of these workers other than doctors who are providing for care of children and the standards of service necessary such as the facilities necessary in a convalescent home to adequately care for the convalescent child. It is concluded by a summary of common pædiatric procedures such as blood tests and a glossary of medical terms to give non-medical workers a better understanding of the technical discussions they may have with doctors. This is an extremely well-written, comprehensive book which covers the subject very thoroughly and is an excellent source of reference for the non-medical members of teams caring for children whether in the hospital, schools, public health departments or children's camps. It is not intended as a pædiatric textbook for the physician.

LA PROGENESE (Progenetics). Antenatal Factors in the Development of the Infant. Edited by R. Turpin, Professor, Faculté de Médecine de Paris. 720 pp. Illust. Centre International de L'Enfance, Travaux et Documents-VIII, Masson et Cie., Paris, 1955. 3,500 fr.

In March of 1954 a one-month postgraduate course in progenetics was organized by the Centre International de L'Enfance in Paris.

Progenetics is a new word proposed by Professor Turpin. It is the study of all possible and even imaginable factors which might influence a human being before its conception. These factors are in part hereditary but in a sizable proportion depend on such varied and less-known influences as alimentation, infections, intoxications, physical and chemical assaults on the progenitors, geographical location, social structure, religious beliefs, economics, age, occupation, I.Q. of parents, size of the family and rank of birth.

Outside the medical aspects of heredity, fertility and sterility, its social aspects are discussed with its moral and legal implications. Thirty-four French, English, Dutch and Belgian specialists in their respective fields have collaborated in the study, which is now published in book form. It is pleasant and stimulating reading which opens up new avenues as yet incompletely explored and gives an up-to-date review of the more classi-

cal knowledge; a fascinating book not only for physicians but for a non-medical public interested in eugenics. The authors have illuminated their central problem of progenetics from many, apparently unrelated angles.

TASCHENBUCH DER PRAKTISCHEN MEDIZIN (A Pocketbook of Practical Medicine). J. Kottmaier, Baden-Baden. 1,058 pp. Georg Thieme, Stuttgart; Intercontinental Medical Book Corporation, New York, 1955. $8.60.

The third edition of this book for use by the general practitioner with a knowledge of German has been brought up to date and covers an even wider field than in the past. There are three new sections on occupational diseases, medicine in sport, and aviation medicine. The widespread drive towards rehabilitation of the injured has led also to the appearance of a section on orthopædics. The former chapter on vitamins and hormones has been suppressed and the material distributed among the various pharmacological sections. This little book contains in the briefest possible compass salient points of diagnosis and treatment of almost every disorder under the sun, as well as sections on diagnostic technique, clinical pathology, therapeutic technique and drugs in alphabetical order. Any general practitioner who reads German will be glad to have this at hand.

APPLIED MEDICAL BIBLIOGRAPHY FOR STUDENTS. W. D. Postell, Medical Librarian and Professor of Medical Bibliography, Louisiana State University School of Medicine, New Orleans. 142 pp. Charles C Thomas, Springfield, Ill.; The Ryerson Press, Toronto, 1955.

Although the author claims modestly that his book is written for students, it could be read with profit by any writer who contemplates submitting a medical paper for publication.

In Part I the story of the development of scientific and medical writing, from the days of the Sumerians to the beginning of modern medical journalism in the middle of the 19th century, is told briefly, concisely, with a real appreciation of the stream of history and the great ports of call en route.

The next topic, presented as "Modern Bibliography", is designed to give a better understanding of the arrangement and organization of a medical library, the working of its card catalogue, a working knowledge of its basic reference books, the various printed indexes to periodical literature and the types of medical journals, the most important part of the library collection.

The third section, "Methods of Bibliography", deals with the preparation of the reference paper. Valuable advice is given on the process of writing the paper—procedures in searching the literature, note-taking, the sentence outline, the writing and style. A practical chapter on documentation of sources employed emphasizes the importance of this aspect of the paper. "If there is one criterion by which the merits of a paper can be judged it is the character of the citations. It is an unfailing index to the care with which a manuscript has been prepared. If there is a lack of consistency in and poor arrangement of the references, it is very easy to infer that the writer is unsystematic in his thinking, and that the preparation of his paper has been poor. . . . No paper is ever completed until the author has verified his references. The chances of error are so many that no one should be satisfied until he has checked his references several times."

The appendix includes a list of references cited in the text, also a carefully selected list of recommended readings. The book is well indexed and illustrated with reproductions of various bibliographical tools, such as types of library card-catalogue cards, serial record cards showing library holdings, specimen pages from various printed indexes to medical periodical literature, and note-taking cards.

Applied Medical Bibliography is highly recommended, especially for all those who have not yet had much experience in the preparation of medical papers for publication, and for all medical libraries.

JOURNAL OF

Canadian Medical Association

Editorial Office—150 St. George St., Toronto 5

General Secretary's Office—150 St. George St., Toronto 5

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The Journal is supplied to paid-up members of the Canadian Medical Association as a perquisite of membership. Medical libraries, hospitals, and individuals may subscribe to the Journal at $12.00 a year, payable in advance. There is a special rate for medical students residing in Canada of $2.50 a year. Subscriptions and all relative correspondence should be addressed to the office of the Managing Editor at 150 St. George Street, Toronto 5, Ontario.

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The Editor reserves the right to make the usual editorial changes in manuscripts; these include such changes as are necessary to ensure correctness of grammar and spelling, clarification of obscurities or conformity to *Journal* style. In no case will major changes be made without prior consultation with the author. Authors will receive galley proofs of articles before publication, and are asked to confine alterations of such proofs to a minimum.

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References: Authors should limit references to published work to the minimum necessary for guidance to readers wishing to study the subject further. They should not quote articles they have never seen, and should set out references in a numbered list at the end of the article, thus:

1. DOAKES, J.: *M. J. Kamchatka*, 1: 2, 1955, giving in order: (1) Author's name and initials in capitals. Where more than three authors are concerned in an article, only the first should be named, with *et al.* as reference to the others. (2) Cumulative Index Medicus abbreviation of journal name. (3) Volume number. (4) Page number. (5) Year.

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PICKWICK, S., *Textbook of Medicine*, Jones and Jones, London, 1st ed., p. 30, 1955.

Illustrations: Photographs should be glossy prints, unmounted and untrimmed, preferably not larger than 10 by 8 inches. Colour work can be published only at the author's expense. Magnification of photomicrographs must always be given. Photographs must not be written on or typed on. Identification can be made by pasting an identifying legend on the back. Patients must not be recognizable in illustrations, unless the written consent of the subject to publication has been obtained. Graphs and diagrams should be drawn in india ink on suitable white paper. Legends to all illustrations should be typed separately from the text of the article. Illustrations should not be rolled or folded.

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WANTED.—Locum tenens from June 9 to July 9, 1956, by doctor in Southern New Brunswick, who wishes to attend C.M.A. Convention. Salary $500 for the period, plus car and living expenses. Reply to Box 702, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

TWO ASSISTANTS in general practice required for Northern Ontario clinic, beginning July 1, 1956. Reply to Box 584, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—An assistant with a view to partnership for a busy general practitioner in a Western Ontario town, with own hospital facilities. Opportunity to net at least $10,000 the first year. Please reply stating age, experience, marital status and religion to Box 621, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

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DOCTOR WANTED for general practice in northern Saskatchewan. Combined office and modern residence for rent. Well-equipped 23-bed hospital. Gravelled highway. Gross income $18,500. Doctor's equipment and furniture may be purchased on easy terms. Reply to Secretary-Manager, Spiritwood Union Hospital, Spiritwood, Saskatchewan.

ASSISTANT REQUIRED (female preferred) for busy general practice 10 miles west of Toronto commencing between July and October 1956. Write giving age and experience. Permanent position in pleasant suburban district with hospital facilities available. Box 642, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—A recent graduate for general practice with a progressive group in the head of the lakes area. Guaranteed salary; partnership participation to be arranged at an early date. Reply, giving age, marital status, religion, and enclose a recent photograph to Box 705, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—YOUNG DOCTOR, as assistant to busy general practitioner surgeon in small manufacturing town in Western Quebec. Ability to speak French desirable. Good salary with opportunity to share in practice after a year if mutually satisfactory. Apply Box 669, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

CLASSIFIED ADVERTISEMENTS

ANÆSTHESIOLOGIST FOR PRIVATE PRACTICE.—150-bed general teaching hospital. Available July 1, 1956. Women physicians preferred. Write stating qualifications to Dr. Esther E. Bartlett, Chief Anæsthetist, New England Hospital, Dimock Street, Boston, Mass.

LOCUM TENENS WANTED for two months — July and August 1956—in Northeastern Saskatchewan town, to assist partnership during holiday season. Car not essential. Salary $500 per month, plus expenses. Comfortable accommodation provided. Please provide references. Apply to Drs. W. Derechin and S. Wolfe, Porcupine Plain, Saskatchewan.

LOCUM TENENS WANTED.—Recent graduate, preferably senior intern, to assist with busy general and surgical practice in progressive northern Ontario town, for two or four weeks starting May 15 or June 1, 1956. Chiefly hospital practice in modern, well-equipped hospital. Personal interview in Toronto required. Salary $800 per month, with car expenses and board provided. Apply Box 661, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

LOCUM TENENS for Fort Vermilion, Alberta, wanted for 5 weeks, starting about middle of July. Offer $500 per month; free board, room and laundry; car facilities; paid return trip from Edmonton. Please contact Dr. H. Kratz, Box 184, Fort Vermilion, Alberta.

WANTED.—Locum tenens for 2 years for busy general practice in Niagara Peninsula. Modern office; apartment; excellent hospital facilities. Owner leaving for post-graduate work. Reply giving age and experience to Box 681, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—Replacement for exceptionally remunerative unopposed surgical, obstetrical and general practice in mining area. Working and living conditions ideal for the right man. Owner leaving to specialize. Please state training, religion, etc. Reply to Box 682, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—Qualified specialist E. N. & T. for progressive, rapidly expanding, Southern Ontario clinic. Reply stating race, age, training and salary expected, to Box 684, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—Medical assistant in group of three in Northwestern Ontario town. Permanent position to suitable applicant. Salary $500 per month with an increase at the end of the first year. One month's holidays with pay for each 12 months' service. Applicant should have his own car and will be paid for use of same on a negotiated mileage basis. All office expenses carried by the employer. Services to begin any time between May 1 and June 1, 1956. Address applications to Box 663, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

INTERNIST WANTED with certification or fellowship for an expanding group practice in Ontario. Some experience in neurology and/or psychiatry would be helpful. Apply stating experience, qualifications, starting salary expected, and include a recent snapshot if possible. Box 585, Canadian Medical Association Journal, 150 St. George Street, Toronto, 5, Ontario.

POSITION VACANT.—A vacancy exists on the active staff of this English-speaking general hospital for a doctor with certification in E.N.T. or E.E.N.T. to take charge of the department. All tonsillectomies referred to the E.N.T. department. A new hospital on a new site has just been completed. For further details apply to: Administrator, Jeffery Hale's Hospital, Quebec City, P.Q.

WANTED.—Urologist with certification or fellowship for a group in Ontario. Apply stating experience, qualifications, starting salary expected, and include a recent snapshot if possible. Box 540, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

ASSISTANT required for busy general practitioner in suburban Toronto area. Opportunity for partnership. Please write giving age, experience and religion to Box 466, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED: ANÆSTHETIST. — Well established group in Central Ontario requires services of certified anæsthetist. Write stating remuneration requirements, experience and references to Box 562, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—Certified surgeon-gynæcologist for country town in Western Canada with large possibilities. Mainly Roman Catholic population. Reply to Box 696, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

ASSISTANT WANTED for busy partnership practice about 100 miles from Toronto. Reply stating age, religion, qualifications, and training, to Box 693, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

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The Royal College of Physicians and Surgeons of Canada

ANNOUNCEMENT OF EXAMINATIONS

Examinations are held for the Fellowship in Medicine and the Fellowship in Surgery, and for the Certificate in the approved medical and surgical specialties.

Applications for the 1956 Examinations will be received until **April 30, 1956.**

Regulations and Requirements of Graduate Training relating to the Examinations, as revised May 1951, application forms, lists of approved hospitals in Canada, and assessment of training application forms, may be obtained from:

The Honorary Secretary
The Royal College of Physicians and Surgeons of Canada
150 Metcalfe Street, Ottawa 4, Canada.

POST-GRADUATE COURSES IN MEDICINE

Designed for Candidates for F.R.C.P.(C) and Certification, and for the American Board of Internal Medicine.

This course will be in two parts. A correspondence section will extend from March 15 to June 30 and will consist of selected reading with weekly written answers to questions.

The second part is a clinical and didactic full time course from July 2 to the middle of September, 1956.

The following intensive Refresher Courses will also be given

Chest Diseases:	**July 9 to 14**
Cardiovascular Diseases:	**July 16 to 21**
Endocrinology and Metabolism	**July 23 to 28**
Hæmatology:	**August 6 to 11**
Neurology:	**August 20 to 25**

All the courses will be conducted by members of the Medical Staffs of The Royal Victoria Hospital; The Montreal General Hospital, and The Montreal Children's Hospital.

Address applications or inquiries to:

The Post-Graduate Board,
Royal Victoria Hospital

OR

The Post-Graduate Board
The Montreal General Hospital
Montreal, P.Q.

CLASSIFIED ADVERTISEMENTS

LOCUM TENENS required June 24 to August 5, 1956, in general practice. Salary $550 per month. House provided. Own car a necessity. Apply to Drs. Murphy & Hancock, Box 880, Campbell River, B.C.

LOCUM TENENS for one year in a small South Saskatchewan town in a very busy district. 14-bed hospital. Opportunity for surgery (help available if desired). Salary $500 and good housing facilities. Possibility of partnership. Reply to Box 699, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

WANTED.—Psychiatrist by City of Toronto, Department of Public Health. Graduate in medicine from a recognized university. Licensure in Ontario and certificated in psychiatry. Salary range $8,500 to $10,500 per annum. Starting salary may be above minimum if experience so warrants. Annual increment, 35-hour week, vacation, sick pay and pension plan benefits. Apply: Personnel Department, Room 320, City Hall, Toronto, Ontario.

WANTED ASSISTANT for general practitioner in Saskatchewan town. Excellent hospital facilities. Reply to Box 701, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

APPLICATIONS for the position of assistant medical health officer for the Victoria-Esquimalt Health Board will be received by the City Personnel Officer, City Hall, Victoria, B.C. Applicant must be a graduate of an approved medical school with a minimum of one year's experience, interested in public health and registerable in British Columbia. Duties will include the baby clinics and school program. Salary range $475-$575 per month, transportation allowance and liberal fringe benefits. Applications should state age, experience, references and when services would be available. An opportunity may be permitted to qualify for a diploma in public health.

Positions Wanted

POSITION WANTED.—English graduate, L.M.C.C., seeks opening in general practice as assistant or partner in Ontario or the Maritimes. Bilingual. 3 years' hospital and 2 years' general practice experience. Reply to Box 674, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

POSITION WANTED.—F.R.C.S. (England), eligible F.R.C.S. (Canada), married, age 32, completing chief resident appointment in June, desires association with established individual or group. Reply to Box 665, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

LOCUM TENENS wanted by Queen's graduate for July and August 1956. Ontario license. Training—one year rotating internship, one year pathology and one year surgery. Reply to Box 695, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

POSITIONS WANTED.—Two recent Ontario graduates desire opportunities in general practice. Preferably in Ontario or Quebec. Available July 1, 1956. Reply to Box 694, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

SURGEON, F.R.C.S. (England), age 33, experienced in general practice and obstetrics, seeks general practice locum posts in Saskatchewan for May and June. Reply to Box 692, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

LOCUM TENENS wanted by Alberta graduate, experienced in general practice. At present orthopædic chief resident. Available June 11-June 29, 1956, inclusive. Prefer Ontario. References furnished. Reply to Box 697, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

PATHOLOGY.—European graduate, M.D., L.M.C.C., age 36, fluent English with four years of tissue and clinical pathology in approved hospitals on this continent, desires position—hospital preferred. Eligible to write certification in 1956. Reply to Box 691, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

OBSTETRICIAN-GYNÆCOLOGIST, Canadian graduate, female, completing four years' residency training in approved American hospital. American Board eligible. Desires association in group or private practice. Reply to Box 690, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

PRECEPTORSHIP WANTED.—Graduate Toronto 1955, conscientious, hard worker, and interning in a large American county hospital, wishes an assistantship with a surgeon or group of surgeons starting July 1956. Reply to Box 688, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

(Continued on page 36)

CLASSIFIED ADVERTISEMENTS

GENERAL SURGEON.—British graduate, age 32, F.R.C.S. (Edinburgh), 1951. Fully trained in general surgery with special experience in pædiatric, fracture and orthopædic surgery. Present post in teaching hospital United Kingdom. Desires to associate with surgeon, group or hospital. Reply to Box 687, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

POSITION WANTED.—Recent Canadian graduate, age 29, single, with 2 years' internship and one year general practice, desires position with small group or established physician. Reply to Box 686, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

POSITION WANTED. — Recent Alberta graduate desires position with established general practitioner or small group for one or more year's experience prior to further training. Married. Available June 15, 1956. Alberta or British Columbia preferred. Write to Box 685, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

Practices

FOR SALE.—Well-established lucrative practice in Eastern Ontario. Fine home—terms can be arranged. Reply to Box 704, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

FOR SALE.—Large remunerative general practice in Saskatchewan city, with modern hospital facilities and office accommodation. Owner leaving to specialize. Will introduce if buyer arrives prior to June 15. Excellent terms. Small down payment with monthly payments thereafter preferred. Reply to Box 653, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

GENERAL PRACTICE in a large district in Manitoba will be available in June 1956 for price of new office equipment and house. 8-bed hospital. Terms to suit. Reply to Box 641, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

FOR SALE.—London, Ontario. Well established practice, 4-bedroom house, all modern conveniences, attached 3-room office and garage. Owner is retiring. Excellent location. Apply Box 666, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

FOR SALE.—General practice in Niagara Peninsula. Should gross $35,000. No capital required; no real estate to buy. Owner specializing. Reply to Box 679, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

FOR SALE.—Active general practice on rental basis. Capable of supporting two doctors. Southern Ontario. Owner leaving to specialize. Reply to Box 680, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

FOR SALE.—Small, fully equipped medical clinic. Eastern section of Toronto. Established 25 years. X-ray equipment and operating room for minor surgery. Gross income about $30,000. One assistant on percentage basis. Owner retiring. Reply to Box 677, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

UNOPPOSED SASKATCHEWAN PRACTICE in small town. Developing rich oil district. 14-bed hospital; all fee for service; could gross $20,000. Fairly new home, with running water, for rent. Home includes T.V. 21" set '55, refrigerator, radio-phonograph and part of furniture. Also available, part of office equipment and B.M.R.; drugs—value $600. Total price $4,500. Reply to Box 700, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

FOR SALE.—Contract practice in mining and lumber district, mid-western Ontario. Price, one year gross—terms. No property to buy unless desired—terms. Owner retiring. Reply to Box 698, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

FOR SALE.—Residence and office of Late Dr. A. Henry E. Morgan, who died on the 4th January, 1956, together with office furnishings and equipment of general practice in the Town of Chesley, Ontario—a progressive community of 1,900 people with excellent farming territory surrounding same. Apply to E. S. Morgan, Drayton, Ontario.

Internships and Residencies

INTERNSHIP AVAILABLE in approved internship program. Full maintenance and $140 monthly stipend. Write Administrator, Hollywood Presbyterian Hospital, 1322 N. Vermont, Los Angeles, California, U.S.A.

FIRST YEAR RESIDENCY in internal medicine in approved residency program. Full maintenance and $200 monthly stipend. Write Administrator, Hollywood Presbyterian Hospital, 1322 N. Vermont, Los Angeles, California, U.S.A.

POSITION AVAILABLE as resident in a 250-bed hospital for a Canadian graduate who has completed one year of rotating internship. Remuneration $300 per month plus maintenance. For further details contact Superintendent, Oshawa General Hospital, Oshawa, Ontario.

HOSPITAL RESIDENCIES.—Two positions vacant for full post-graduate training in diagnostic radiology, commencing July 1, 1956. Apply to Director, Department of Radiology, University of Alberta Hospital, Edmonton, Alberta.

POSTS AS RESIDENT AND ASSISTANT RESIDENT in pædiatrics are available as of June 1956 at the Children's Hospital, Halifax, Nova Scotia. This hospital is approved by the Royal College of Physicians and Surgeons to provide two years' training towards certification in pædiatrics. Salaries are: $150 per month plus full maintenance for the post of resident. $125 per month plus full maintenance for assistant resident. Application forms and any further information are available on request from: F. H. Silversides, Administrator, The Children's Hospital, Halifax, Nova Scotia.

PSYCHIATRIC RESIDENCIES.—Modern 3,000-bed hospital. Active admission service and treatment program. Initial salary $5,280. Step series to $7,080 per annum after 4 years' psychiatric training. Maintenance deducted. Approved for qualified Exchange-Visitor candidates. Apply to Fairfield State Hospital, Newtown, Connecticut, U.S.A.

ST. LUKE HOSPITAL in Montreal, capacity of 451-beds, is considering applications for internship or residencies in the different services of a general hospital and most specially in the following services where the teaching is approved by the American College of Surgeons: surgery, medicine, obstetrics, oto-rhino-laryngo-ophthalmology, pathology and radiology. Applicants may address their applications to Doctor H. I. Tétreault, Medical Superintendent.

INTERNSHIPS IN A GENERAL HOSPITAL.—Youville Hospital, Noranda, Quebec, 225-beds, operated by Grey Nuns of the Cross, requires a senior and junior intern, bilingual. Salaries $400 and $300 per month plus maintenance. Hospital provisionally accredited. Apply to Secretary, Medical Society, Youville Hospital, Noranda, Quebec.

MEDICAL RESIDENCIES AVAILABLE July 1, one-year approval; 224-bed general hospital; modern, well-equipped, intern and resident training program; house staff allowed full range under proper medical supervision; full maintenance and uniforms; monthly stipend $250-$300. The Lawrence and Memorial Associated Hospitals, New London, Connecticut. William J. Murray, Jr., M.D., Chairman, Committee on Residents and Interns.

INTERNSHIP.—The Northwestern General Hospital, Toronto, has vacancies for junior rotating interns covering medicine, surgery, obstetrics, gynæcology and specialties, commencing July 1, 1956 and January 1, 1957, Ideal opportunity for persons preparing to do general practice. Salary $150 per month plus living bonus and excellent separate quarters. Apply to Intern Committee, 2175 Keele Street, Toronto 5, Ontario.

INTERNSHIP AVAILABLE at St. Luke's Hospital in Duluth, Minnesota. Excellent teaching program. Write Assistant Superintendent for full particulars.

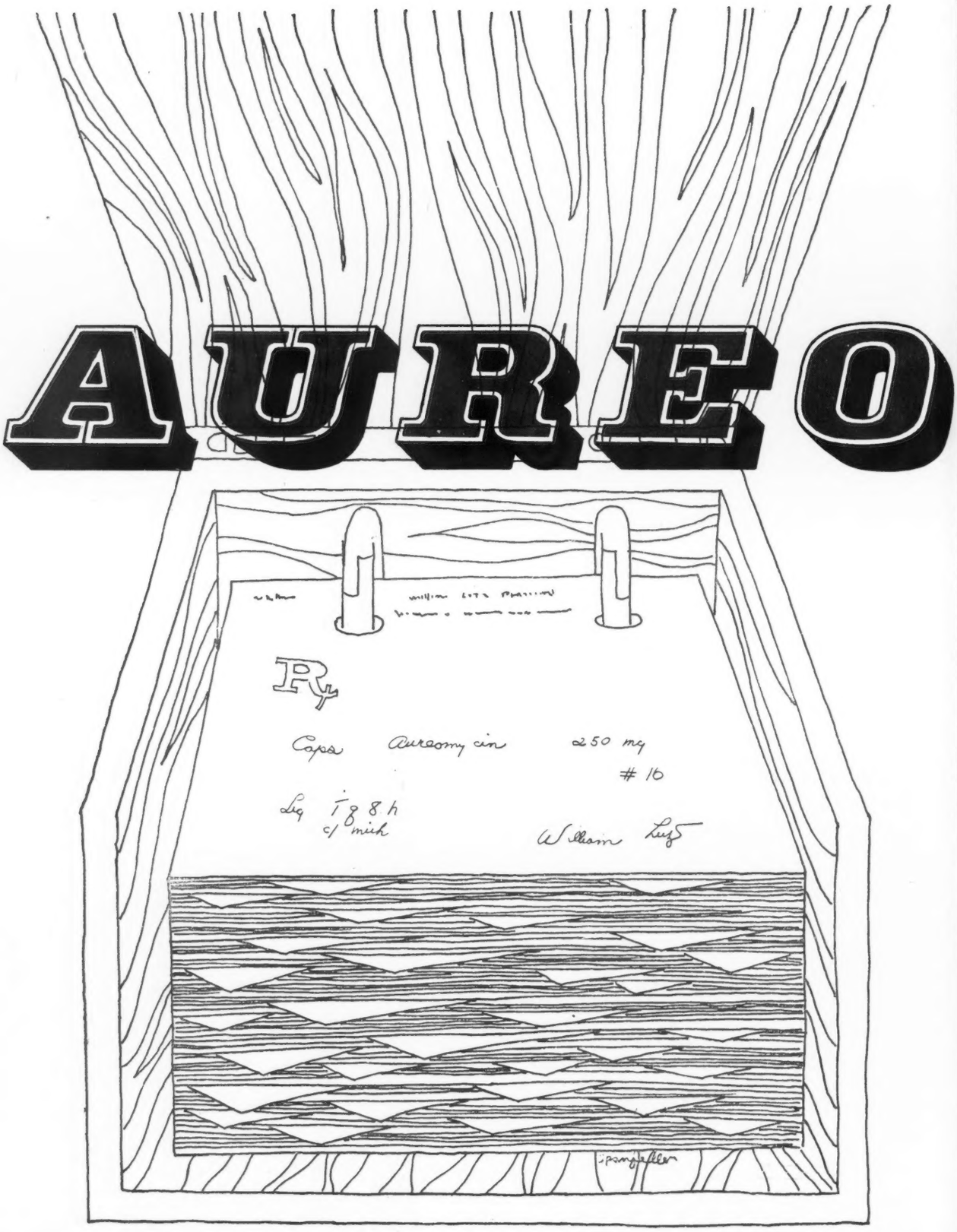
RESIDENCIES IN ANÆSTHESIA.—The Department of Anæsthesia of the Royal Victoria Hospital, Montreal, offers approved residencies of one or two years' duration. Previous rotation service is required and preference is given to those who have had experience in practice. Appointments available to commence July 1, 1956, and January 1, 1957. Salary and maintenance. For information apply to the Executive Director, Royal Victoria Hospital, Montreal 2, Quebec.

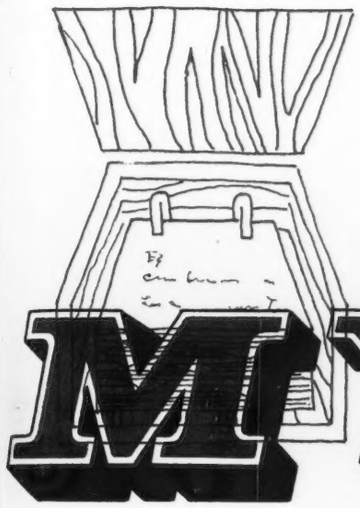
ASSISTANT RESIDENT IN PÆDIATRIC PATHOLOGY from July 1, 1956 to June 30, 1957 Children's Hospital, Winnipeg. Opportunity provided for special investigation and case study, and teaching to senior medical students under supervision of Assistant Professor of Pathology, University of Manitoba. Training accepted for full year toward specialty qualification in pædiatrics or pathology. For further information write: Wallace Grant, M.D., Chairman, Intern Committee, Children's Hospital, Winnipeg, Manitoba.

ONE-YEAR RESIDENCY IN PATHOLOGY.—309-bed general hospital with university affiliation, Western Canada. Department approved by Royal College of Physicians and Surgeons of Canada. Duties restricted to surgical pathology and autopsies. Reply to Box 689, Canadian Medical Association Journal, 150 St. George Street, Toronto 5, Ontario.

ANÆSTHESIOLOGY RESIDENCIES at the University of Minnesota Medical Centre. Two- or three-year program with clinical and didactic instruction in all phases of anæsthesia. Board approval. Positions starting every month. Address: F. H. Van Bergen, M.D., University of Minnesota Medical Centre, Minneapolis 14, Minnesota, U.S.A.

Canad. M. A. J.
April 15, 1956, vol. 74





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Eight years of world-wide use . . . more than a *billion* doses administered . . . millions of patients restored to normal health, many saved from death—this is the unsurpassed record of AUREOMYCIN* Chlortetracycline.

AUREOMYCIN, the first extensively prescribed broad-spectrum antibiotic, must certainly rank with the major therapeutic agents available.

Thousands of published clinical trials have established its efficacy in combating many kinds of infection. Thousands of doctors give it their highest acclaim by regularly employing it in their practices.

A convenient dosage form for every medical requirement.

dry filled sealed capsules

Now Available:

AUREOMYCIN SF Capsules, 250 mg.

Chlortetracycline with Stress Formula Vitamins.
For Patients with Prolonged Illness AUREOMYCIN SF combines effective antibiotic action with Stress Formula vitamin supplementation to shorten convalescence and hasten recovery. One capsule, q.i.d., supplies one gram of AUREOMYCIN and B Compound, C and K vitamins in the Stress Formula suggested by the National Research Council. AUREOMYCIN SF Capsules are dry-filled and sealed, contain no oils or paste.

Each capsule contains:

AUREOMYCIN Chlortetracycline	250 mg.
Ascorbic Acid (C)	75 mg.
Thiamine Mononitrate (B_1)	2.5 mg.
Riboflavin (B_2)	2.5 mg.
Niacinamide	25 mg.
Pyridoxine (B_6)	0.5 mg.
Folic Acid	0.375 mg.
Calcium Pantothenate	5 mg.
Vitamin K (Menadione)	0.5 mg.
Vitamin B_{12}	1 mcgm.

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*REG. TRADE-MARK IN CANADA

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MEDICAL NEWS *in brief*

(Continued from page 650)

UNDESCENDED TESTIS

In a recent paper in the *Journal of the American Medical Association,* (160: 634, 1956) Gross and Jewett of Boston describe their experience in 1,222 operations for undescended testis. They do not share the current gloomy view on the value of this operation. They consider that orchiopexy is an operation of great merit which may give extremely good results as judged by the physical characteristics of the testis, by the position of the gland, and by the fertility of the individual later. In a group which they studied 10 years or more after bilateral orchiopexy, 79% were found to be fertile. They criticize the Torek type of operation because of the damage to the testicular blood supply by anchorage of the organ to the thigh. They liberate widely the vas and the vessels of the cord above and below, so as to allow the testis to be brought down into the scrotum without tension in most cases. The optimum age for this operation is between 9 and 11 years of age.

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U.S. STUDIES OF PATIENT CARE

During March and April, the American Hospital Association and the U.S. Public Health Service are sponsoring studies of patient care in 50 general hospitals in New York, New Jersey, Ohio, Indiana, Michigan and Illinois. The studies will be conducted by consultants from the Public Health Service, Division of Nursing Resources, where the study design and methodology were developed. One purpose is to determine to what extent the number of hours of nursing care provided each patient contributes to his satisfaction with his hospital stay. Another objective is to find out what nurses and other members of the hospital staff think about the nursing services they are able to provide. From the facts obtained, the participating hospitals expect to develop ways of improving patient care. On a single day in each of the 50 selected hospitals, doctors, nurses, other personnel, and all patients who are well enough will fill out questionnaires stating frequent or infrequent causes of dissatisfaction with nursing. Participation is entirely voluntary and the completed questionnaires will be anonymous when they leave the hospital for analysis by the Public Health Service in Washington, D.C.

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JOURNAL OF PSYCHOSOMATIC RESEARCH

A new quarterly international research journal on psychosomatic medicine, the *Journal of Psychosomatic Research,* is announced. The editorial board is international, but the contributions will be published in English. The policy of the board is to preserve an interdisciplinary approach; clinical and experimental studies by sociologists, biologists and anthropologists may be accepted. Individuals may have the journal for $9.80 a year, but institutions, libraries and firms will be asked to pay $14. Information from the Pergamon Press, 4 and 5 Fitzroy Square, London, W.1.

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LEUKEMIA SOCIETY, INC.

The Leukemia Society, Inc., formerly the Robert Roesler de Villiers Foundation, established specifically for the purpose of encouraging research directed at finding a means for a preventive measure, control or cure of leukæmia, will award grants-in-aid to support research projects on leukæmia for the year 1956-57. Various amounts will be awarded depending upon the requirements of the investigators. Grants offered in 1956 will take into consideration requests covering more than one year. Renewal of grants at the termination of the initial period will also be considered. Applications may be made throughout the year. In order to be reviewed at the meetings of the Selection Committee on June 1 and September 1, 1956 and March 1, 1957, they should be received not later than May 15 and August 15, 1956 and February 15, 1957.

The Leukemia Society, Inc. will also accept applications for fellowships for students in the field of leukæmia and allied diseases to be given during the year 1956-57, to be awarded by the Selection Com-

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MEDICAL NEWS *in brief*

(Continued from page 41)

mittee on the dates of the meetings mentioned above.

Qualified investigators are encouraged to apply to:

Leukemia Society, Inc., 67 Wall Street, New York 5, N. Y.

CANADIAN PSYCHIATRIC ASSOCIATION JOURNAL

The new quarterly organ of the Canadian Psychiatric Association, the *Canadian Psychiatric Association Journal,* whose first issue is dated January 1956, will undoubtedly fill a gap. In the first issue the editor, Dr. F. C. R. Chalke of Ottawa, describes the two main functions of the *Journal* as the distribution to psychiatrists in Canada of information from their colleagues which leads to improved care for psychiatric patients, and secondly presentation of the work of Canadian research psychiatrists before the scientific forums of the world. The President, Dr. McKerracher, contributes a foreword, and there are articles on social therapy, art therapy, reserpine, chlorpromazine (in French) and the effects of repeated insulin hypoglycæmia on human capillary and tissue metabolism.

The journal is attractively produced and carries very adequate French summaries of articles in English and vice versa. We wish it success.

NEW SURGICAL JOURNAL

We regret our tardiness in noticing the arrival of a significant new contribution to the periodical literature. The *Journal of the Royal College of Surgeons of Edinburgh* began publication in September 1955, and will continue as a quarterly. It is, as might be expected, a beautifully produced journal, selling for the low sum of one guinea (approximately $3) a year. The first issue opens with an account of the celebrations of the 450th anniversary of the College last year, which included a visit of His Royal Highness the Duke of Edinburgh. It was on this occasion that the Toronto surgeon, Dr. W. E. Gallie, received an Honorary Fellowship. The issue also contains articles by such distinguished figures as Professor Merle d'Aubigné of Paris, Sir Heneage Ogilvie and Professor Walter Mercer of Edinburgh. There is an amusing tribute to the College of Surgeons by a layman. After running through its early history, the poet comes to the 19th Century and says of the fellows of the College:

"But 'time would fail,' as Scripture says,
To name the great o' later days;
So, ere the time slips clean awa,
Twa mighty names we maun reca'.
There's Simpson, wi' his lion mane,
The gentle knight that vanquished pain;
And Lister, gracious, wise and kind,
Wi' tender heart and powerfu' mind.

A cloud o' witnesses are they
To mak us proud and glad this day.
And thankfu' are we at the thocht
O' a' oor Surgeon chiels have wrocht
Man's pains and sorrows to assuage
And help him through Life's pilgrimage."

In addition to original articles and lectures delivered at the College, this journal contains College news. It will certainly be popular with all those who have in the past had associations with this ancient and world-famous institution.

U.S. SOCIETIES VISITING QUEBEC

We have received from the Section of Otolaryngology, Montreal Medico-Chirurgical Society, a list of American medical societies coming to the Province of Quebec during May for their conventions. The Section will be acting as host. The list of visitors is as follows: (1) American Board of Ophthalmology and Otolaryngology, Montreal, during the week of May 7. (2) American Otological Society, Inc., Seigniory Club, Montebello, Que., May 11 and 12. (3) American Laryngological Association, May 13 and 14, Seigniory Club, Montebello, Que. (4) American Broncho-Esophagological Association, Sheraton Mount Royal Hotel, Montreal, May 15 and 16. (5) American Laryngological, Rhinological and Otological Society, Inc., Montreal, May 15 to 17.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Applications for certification (American Board of Obstetrics and Gynecology) for the 1957 Part I examinations are now being accepted. Candidates are urged to make such application at the earliest possible date. Deadline date for receipt of applications is October 1, 1956. All candidates for admission to the examinations are required to submit with their application a plain typewritten list of all patients admitted to the hospitals where they practise, for the year preceding their application or the year prior to their request for reopening of their application.

Application for re-examination, as well as requests for resubmission of case abstracts, must be made to the Secretary before October 1, 1956.

Current bulletins outlining present requirements may be obtained by writing to Robert L. Faulkner, M.D., Secretary, American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

TETRACYCLINE AND VITAMINS IN PÆDIATRICS

Two papers have appeared recently from Chicago, reporting the treatment of pharyngeal and respiratory tract infections in children with orally administered preparations containing tetracycline and the vitamin mixture proposed by the U.S. National Research Council as a therapeutic adjuvant in times of stress. In each case 50 children were treated. The dose of tetracycline given was 750 mg. to 1 g. Clinical response to therapy was excellent, and side-effects were not encountered. Recovery was uniformly rapid.—M. L. Zee: *Antibiotic Medicine*, 1: 661, 1955; M. B. Andelman and L. A. Nathan: *Antibiotic Medicine*, 2: 45, 1956.

MARKLE FUND GRANTS

The John and Mary R. Markle Foundation has announced the

(Continued on page 44)

MEDICAL NEWS *in brief*

(Continued from page 43)

appointment of 23 Scholars in medical science, all faculty members of medical schools in the United States and Canada. The fund appropriated $690,000 toward the support of these doctors and in their research, to be granted at the rate of $6,000 annually for five years to the 23 medical schools where they will teach and carry on research. The 23 Scholars were selected from 49 candidates nominated by deans of medical schools, each of whom presented a five-year program for advancing the scholar "up the academic ladder". One of the grants goes to Queen's University, Kingston, Ont., for Robert I. Merritt, M.D., C.M., currently clinical tutor and after July 1, 1956, lecturer in obstetrics and gynæcology. Dr. Merritt is a graduate of Queen's University.

STATEMENT ON SMOKING, AMERICAN HEART ASSOCIATION

A committee of the American Heart Association appointed in 1954 to review and appraise all available scientific evidence relating to smoking and heart disease has issued the following statement:

"1. There is evidence supported by clinical observations in a large number of cases that tobacco smoking is harmful in certain diseases of the peripheral blood vessels of the arms and legs. This harmful effect is demonstrated most clearly in the condition known as thrombo-angiitis obliterans (Buerger's disease). It is known that this disease will usually continue to progress if the patient continues to smoke, and that it will usually become stationary or even improve if he stops smoking. If smoking is resumed the disease will usually become active again.

"2. It is recognized that a small percentage of persons with known disease of the coronary arteries will develop symptoms and will display signs detectable by laboratory tests when they smoke. Such people may be harmed by smoking.

"3. The Committee believes that the available evidence is not sufficient to define the effect of tobacco smoking upon the coronary arteries or upon the heart itself, except in the small group mentioned above who already have coronary artery disease. It is believed that if smoking plays any part in the causation of heart disease, it is only one of many factors.

"4. It is the belief of the Committee that much greater knowledge is needed before any conclusions can be drawn concerning relationships between smoking and increased death rates from coronary heart disease. The acquisition of such knowledge may well require the use of techniques and research methods that have not hitherto been applied to this problem.

"5. Consequently it is recommended that the continuing interest of the American Heart Association be implemented by the appointment of a technical committee representing a wide range of research experience, to suggest the lines of investigation that may be most productive."

FEDERAL HEALTH GRANTS

Manitoba.—Federal health grants totalling $73,950 have been awarded to Manitoba for special projects involving child and maternal health and medical rehabilitation. A grant of $63,205 will go towards the purchase of Manitoba's allotment of poliomyelitis vaccine for this year's immunization program. A medical rehabilitation grant of $10,746 will be used to provide physiotherapy and occupational therapy equipment for the departments of physical medicine in the Winnipeg General Hospital, the St. Boniface Hospital, and the Winnipeg municipal hospitals, for use in the province's rehabilitation program.

King Edward Hospital, Winnipeg, gets a grant of $33,000 to help meet costs of altering a section of the hospital to provide accommodation and related facilities for 22 more chronically ill patients. King Edward Hospital provides services for upwards of 400,000 people in the Winnipeg district and in rural areas of the province.

Ontario.—St. Michael's Hospital, Toronto, will benefit from a federal grant of $18,455, to help provide psychiatric inpatient and outpatient services. A grant of $174,446 goes to the Brantford General Hospital to help pay the costs of an addition with accommodation for 110 medical, surgical, obstetrical and psychiatric patients, 28 bassinets in cubicles, and an outpatient area with x-ray, laboratory and emergency facilities. St. Andrew's Hospital, Midland, gets a grant of $106,650 towards the construction costs of a new wing and the renovation of the existing building to provide a 47-bed chronic unit. At Sault Ste. Marie, a grant of $3,500 will help to provide additional accommodation for nursing staff at the Plummer Hospital. The General Hospital, Kincardine, will receive a grant of $30,086 towards construction costs of an addition to provide for 25 more medical, obstetrical and surgical patients, 14 bassinets in cubicles, and expanded outpatient facilities.

A study of the work of the general practitioner in Canada is the purpose of a public health research grant of $2,475 to Ontario. The study, part of a three-year survey of general medical practice in Canada, will be undertaken by the Department of Hygiene and Preventive Medicine, University of Toronto, in association with the

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MEDICAL NEWS *in brief*

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College of General Practice of Canada.

The provincial department of health has been awarded a grant of $2,550 to assist in setting up a demonstration course for nursing assistants at the Central Technical School, Toronto.

Saskatchewan. — A grant of $48,000 goes to St. Joseph's General Hospital, Estevan, towards construction of an addition with accommodation for 35 patients, and 16 bassinets in cubicles. A community health centre is included in the addition with laboratory, physiotherapy and x-ray facilities and an emergency room. In Northern Saskatchewan, the Uranium City Union Hospital gets a grant of $40,583 towards construction costs of a hospital and staff residence. The new hospital replaces the Uranium City Hospital, destroyed by fire in May 1955.

Alberta.—A grant of $48,000 has been awarded to the Claresholm Chronic Hospital; the new building will accommodate 32 chronically ill patients.

Quebec. — The Jewish General Hospital, Montreal, is to receive a grant of $6,286 for additional technical equipment and staff for the hospital cancer clinic. The Royal Victoria Hospital, Montreal, is to receive a grant of $12,499 to assist in setting up a rehabilitation service. The Royal Victoria Hospital plans to use some 40 beds for rehabilitation and will include in its rehabilitation centre departments of physiotherapy, occupational therapy and speech therapy. Their program will be closely related to those of the Rehabilitation Centre of Montreal and the Faculty of Medicine, McGill University.

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AMES AWARDS OF AMERICAN COLLEGE OF GASTROENTEROLOGY

The American College of Gastroenterology, in co-operation with the Ames Company of Indiana, announces the 1956 Ames Award Contest for the best papers in gastroenterology. The first prize is $500 plus a certificate of merit and a one-year subscription to the *American Journal of Gastroenterology*. All papers submitted must represent original work in gastroenterology and must not as yet have been published or presented at national meetings. The contents may involve clinical or basic science. Further information may be obtained from the American College of Gastroenterology, 33 West 60th Street, New York 23, N.Y.

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JOINT COMMISSION ON ACCREDITATION OF HOSPITALS

The Board of Commissioners of the Joint Commission on Accreditation of Hospitals met in Chicago on January 28, 1956 and approved a new edition of the "Standards for Hospital Accreditation". This document is obtainable from the Joint Commission, 660 North Rush Street, Chicago 11, Illinois, at a cost of 25 cents per copy. Several changes are of direct interest to medical staff and medical administrators. The requirement that all patients on admission be tested for syphilis has been dropped. It is no longer necessary for hospitals to record pelvic measurements on obstetrical patients. Certain changes in autoclaves are approved. An automatic stop order on dangerous drugs has been added. In other words the medical staff of a hospital should put a time limit on dangerous drugs. Many hospitals have a 48-hour limit for such drugs as narcotics or hypnotics. A written plan for the reception and care of mass casualties is an added requirement for accreditation.

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INTERNATIONAL CONGRESS OF GASTROENTEROLOGY

We are asked to announce that the International Congress of Gastroenterology which will take place at the Royal College of Surgeons of England, Lincoln's Inn Fields, London, from July 18 to 21, is open not only to specialists in gastroenterology but also to other interested persons. Subjects for discussion include ulcerative colitis, pre-malignant conditions of the gastrointestinal tract, and non-

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Indicated in acute inflammatory conditions, particularly
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FOR ACUTE INFLAMMATORY CONDITIONS

Detailed information on request.

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MONTREAL CANADA

MEDICAL NEWS *in brief*

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malignant diseases of the œsophagus. A scientific demonstration is being arranged and also a technical exhibition. Simultaneous interpretation will be provided in English, French, German and Spanish. Social functions will include receptions by the University of London and the Royal College of Physicians of London, and a Congress Banquet at the Guildhall. Information from the Congress Office, The London Hospital, Whitechapel, London E.1., England.

REPORT ON ALCOHOLISM

The fifth annual report of the Alcohol Research Foundation of Ontario for the year 1955 has been received. As in the past, Foundation activity comprises research, education and treatment. It is a measure of the regard in which the Foundation is held outside Canada that the National States Conference on Alcoholism will take place in 1956 in Toronto; at this, all the state programs in the United States and provincial programs in Canaded will come under review.

The year's operations are rereviewed by Mr. H. David Archibald, the Executive Director. He shows clearly the gravity of the problems concerned. The percentage of the Ontario population using alcoholic beverages has increased in the last 12 years from 59 to 72%, and about one in 40 of these is a chronic alcoholic. Mr. Archibald briefly discusses some of the factors involved in this increase. He shows a close correlation between consumption, personal income and alcoholism. He also stresses community or racial attitudes to alcohol, mentioning the extremely low incidence of alcoholism among the Jewish population, in spite of the almost universal acceptance of social drinking. Behaviour commonly associated with drunkenness is however universally taboo in this culture.

Discussing services rendered, Mr. Archibald mentions the fact that total facilities in Ontario can now admit 700 new patients a year, whereas about 4,000 new cases of alcoholism appear in the province each year. The need for community endeavour is emphasized:

> "As indicated in the annual report for 1954, it is essential that many persons—family physicians, social workers, and all those holding prominent positions in their local communities – become involved in the control and prevention of alcoholism. In the final analysis, the problem will not be solved by specialized agencies working solely in the field of alcoholism but by the efforts of the many people who work in the field of health and who encounter the alcoholic in early or later phases of the illness. It is the primary task of the Foundation, as a specialized agency to develop knowledge and transmit it to the health workers in the field. Through this process the number of people engaged in the treatment of alcoholism as part of their regular duties will be very greatly increased. Such a process requires a treatment program to gain experience in treating all kinds of alcoholics, a research program to develop basic knowledge concerning alcoholism, and an educational program to transmit the knowledge to the workers in the field. Only through this three-pronged attack can there be hope for rapid progress in providing treatment for the 57,000 citizens of this province who have acquired this illness."

Among special problems the report discusses the alcoholic resistant to treatment and the alcoholic driver.

The Research Department outlines a great variety of Foundation studies either completed or in progress. These range from a survey

of attitudes of Ontario clergymen to biochemical and pharmacological studies. The Medical Director, Dr. Armstrong, begins his report by mentioning the newly formed branch treatment organizations in London, Ottawa and Kingston. He expresses concern with the fact that a large mass of people with alcohol problems are still not in touch with treatment facilities.

MONTREAL NEUROLOGICAL INSTITUTE

The 20th annual report of the Montreal Neurological Institute is now published. Dr. Wilder Penfield, Director of the Institute and recently appointed Chairman of the University Department, surveys the work during the first year after the Second Foundation. He says that "A new harness has been fitted, strong young workers added, and each member of the team now pulls according to the strength the Good Lord gave him, knowing that the future of the common cause is secure for a season." After mentioning a few of the tasks he has accomplished in the past year, Dr. Penfield states emphatically that he has not retired, nor is there any immediate prospect of his retirement.

In recruiting clinical staff it is the policy of the Institute to give preference at the moment to men whose primary language is French; this is being done in order to achieve an appropriate balance between the two languages. Although general hospitals in Montreal and elsewhere have their own neurological and neurosurgical services, there are certain medical conditions for which only the Montreal Neurological Institute is equipped. Leadership is the function and purpose of the Institute, but this does not imply competition with specialists in other hospitals. Dr. Penfield refers to the excellent relationship of the Institute to the other hospitals of Montreal.

Pointing out that the Institute is an organization which would serve the people in war as in peace, he pleads for Federal assistance on a continuing basis, i.e. by endowment, rather than on a basis of annual grants. The annual grant system, of course, bedevils many research institutes and often prevents the launching of important long-term projects.

Dr. Jasper in a brief discussion of research in progress, refers to an important development, the inauguration of weekly research conferences at which work in progress in all departments can be discussed and the necessary community of interest maintained.

The report continues with the usual contributions from the various departments of the Institute.

REHABILITATION IN SASKATCHEWAN

In a recent issue of the *British Journal of Physical Medicine* (19: 1, 1956), Dr. A. C. Kanaar, Medical Director of the Physical Restoration Division of the Saskatchewan Department of Public Health, describes the rehabilitation program in that province. He points out that the development of rehabilitation by the Public Health Department of Saskatchewan has in the past involved almost entirely cerebral palsy and poliomyelitis; even now these cases constitute about 95% of the total. There are two special centres, one in Regina and one in Saskatoon. In Saskatoon the facilities began in 1943 with a polio clinic, and cerebral palsy was tackled some six years afterwards. The Saskatoon centre has received much support in the past from the voluntary agency, the Council for Crippled Children and Adults. In Regina the first polio clinic was organized in 1937 and the cerebral palsy centre in 1949.

Dr. Kanaar sketches the rehabilitation program of the Social Welfare Department, beginning with the establishment in 1944 of a provincial department of reconstruction and rehabilitation. The department is now known as the Department of Social Welfare and Rehabilitation and the appointment of a provincial coordinator of rehabilitation in February 1954 was one of the first to be made in Canada. In 1953 the Public Health Department transferred its cerebral palsy and polio work to a new Division of Physical Restoration, and in autumn 1954 a Director of Physical Medicine was appointed under a dominion-provincial grant for medical rehabilitation. Since the post is the only whole-time provincial post of its kind, the work of

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the Director is described in some detail. The Director spends some time in Saskatoon, with clinical work, staff conferences, hospital visits and discussion with consultants, and some time in Regina. He mentions the recent formation of a clinic for scoliosis due to polio. The Director also spends two half-days a week as provincial medical representative on the committee reviewing applications for disabled persons' allowances. This is a good source of cases in need of rehabilitation. Some of the Director's time is also taken up in fostering interest in rehabilitation within the community by lectures and demonstrations to laymen and doctors. The article notes such activities as the mobile rehabilitation clinics and the braceshop in Saskatoon and outlines future possibilities.

DEATH FROM BARBITURATES PLUS ALCOHOL

Various authors in recent years have suggested that the combination of barbiturates and alcohol is particularly dangerous, and the question has arisen whether these two drugs act synergistically, giving a result greater than the sum total of their lethal effects or whether the lethal effect is simply an additive one. Experiments by Archer of the University of Texas (*Texas Reports on Biology and Medicine*, 14: 1, 1956) suggest that in mice the synergism is a purely additive one and the two drugs do not potentiate each other.

ANTENATAL SEX DETERMINATION

Every expectant mother is anxious to know the sex of her child long before it is born, but all attempts so far to predict sex have proved unsatisfactory. Fuchs and Riis report (*Nature*, 177: 330, 1956) a promising line of enquiry based on the theory that cells in human amniotic fluid may be used to determine fetal sex. They collected amniotic fluid from pregnant women either at term when the membranes were ruptured to induce labour, or earlier in pregnancy by puncturing the membranes. Centrifuged specimens were examined on slides after fixation and staining as described by Murray Barr. Fuchs and Riis correctly predicted the sex of the fetus in all of 20 cases from investigation of the nuclear chromatin. They warn us that mere curiosity does not justify transabdominal puncture of the uterus, and that the practical value of the procedure in humans is probably limited.

CORTISONE OR ACTH IN RHEUMATISM

Jordal, a Danish physician, has attempted to evaluate the relative merits of cortisone and ACTH in long-term treatment of rheumatoid arthritis. He treated 45 patients with rheumatoid arthritis and three with rheumatoid spondylitis for six to 12 months. He believes that ACTH is preferable for long-term therapy, particularly because ad-

renal cortical atrophy is thereby avoided, and that cortisone should be used for acute situations where the adrenals are already in maximum stimulation.—*Danish M. Bull.*, 3: 24, 1956.

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NYSTATIN

Welch summarizes in an editorial (*Antibiotic Medicine*, 2: 79, 1956) the present place of the antifungal substance nystatin in medicine. Nystatin is known to be effective in infections with *Candida albicans* and also to be of low toxicity. In view of the fact that Candida infection or moniliasis can be a serious complication of treatment with broad-spectrum antibiotics, it has been suggested that nystatin should be given prophylactically whenever such antibiotics are used.

Welch considers that there are several types of patient for whom nystatin ought logically to be combined with broad-spectrum antibiotics. These include debilitated patients, those receiving cortisone concurrently, diabetics and pregnant women. These groups, however, should not be the only ones to receive nystatin, nor should they necessarily all be given it. The use of nystatin must depend on the clinical judgment of the physician in the individual case.

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THE PALPABLE PROSTATIC NODULE

What is the significance of a palpable nodule felt in the prostate on rectal examination? Jewett of Baltimore says that in 50% of cases when such a nodule is felt in men over 40, it is malignant, provided that the radiograph has not shown a calculus. The family physician is responsible for early detection of such nodules, and there are no clinical signs which will distinguish the malignant from the benign. The author advocates exposure of the entire posterior surface of the prostate from the perineum and removal of the nodule for examination. After the specimen has been taken, the operative area is coagulated. Even where the nodule is malignant, there can be a ten-year survival rate of 50% after radical perineal prostatectomy. This survival rate compares favourably with the expected survivorship in men of the same age group from the general population.—*J. A. M. A.*, 160: 838, 1956.

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CONSERVATIVE TREATMENT OF PROSTATIC CANCER

Pool and Thompson point out that in the past 30 years there has been a tremendous change in the outlook in cancer of the prostate. Many patients with this disease live for a long time and may remain free from suffering and pain. They have examined the case records of 1,560 patients with carcinoma of the prostate. In each case transurethral resection was performed, and this conservative operation gave such good results that for example in 1942-46 the five-year survival was 39.2%. In addition, of course, patients were given the benefit of hormone therapy. The average amount of

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tissue removed was less than 20 g.; this relieved urinary obstruction and only 173 had to return for further operation. The authors feel that although cancer of the prostate can seldom be detected early enough to permit radical surgical treatment, conservative treatment is definitely indicated for most patients and should be approached in an optimistic spirit. The relief of obstruction must be the main objective. Hormone therapy, cortisone and irradiation must be considered for each individual case. —*J. A. M. A.*, 160: 833, 1956.

DEBASING THE CURRENCY

In his annual report of the Faculty of Medicine, University of Toronto, for the session 1954-1955, Dean MacFarlane complains about the debasement of the doctorate. He mentions that since 1928 the University of Toronto, in line with other Canadian and American universities, has granted the degree of doctor of medicine to every student successfully completing his undergraduate course. This was originally done to fall in line with other universities, because some Toronto graduates were having difficulty in convincing persons in other centres that the M.B. was a qualifying degree. He points out that in other fields of university endeavour, the successful completion of a basic course only carries a bachelor's degree. It is significant of the poor regard in which a doctorate is now held that most members of the class of 1905, asked last year whether they wished to change from M.B. to M.D. by paying a nominal fee, refused this on the ground that the degree of M.D. had ceased to be any special mark of distinction, wisdom or attainment. This debasement is of course in line with other thinking in a society where any student who reads a book in a library speaks of his activity as "research", and where "graduates" abound in everything from hairdressing schools to courses in salesmanship.

GENERAL PRACTITIONERS AND HOSPITALS

A scheme is being worked out in Scotland for the part-time employment of general practitioners in hospitals. One of the complaints about the National Health Service has been the extreme difficulty which general practitioners find in obtaining any hospital appointment. The scheme envisaged would have two aspects. In the first place, young men who are setting out as general practitioners may obtain posts in which approximately half their time is spent in hospital as a senior house officer or registrar, while the other half is spent as a trainee-assistant in general practice under an experienced and approved practitioner. The training period would continue for two years, and the trainee would receive a consolidated payment for his two jobs. The other aspect concerns practitioners who have already served their apprenticeship and who wish to do part-time work in hospitals. An attempt will be made to find suitable localities in which it would be possible for a general practitioner to spend say approximately half his time in his practice and the other half in filling hospital posts.

CHANGING HEALTH PROBLEMS

In a recent issue of *Canada's Health and Welfare*, Dr. Robert Kohn, Chief of the Public Health Section, Dominion Bureau of Statistics, discusses the effect of a changing population on health problems. There are two factors in Canada which are affecting the volume and extent of medical care. In the first place the population is continually increasing and this demands a continuous expansion of health services; in the second place the population is aging, and this aging is accounting for a greater volume of disability. Dr. Kohn estimates that aging of the population accounts for about two million of the days spent in hospital each year and for over a million doctor's home and office calls. Whereas at the moment some 400,000 people in Canada are incapacitated on any given day, quite apart from those re-

(Continued on page 54)

NO Gastric Irritation with this Oral Analgesic

Really palatable

No water, no chewing necessary

PAYNOCIL

T. M. REG'D.

Paynocil represents a considerable advance in new oral analgesics combining Acetylsalicylic Acid and Amino-Acetic Acid.

- Paynocil does not cause gastric irritation.
- Paynocil provides the most palatable and convenient form of analgesic medication yet developed.
- Paynocil disintegrates pleasantly and rapidly on the tongue. Swallowing with water or chewing are unnecessary.
- Paynocil provides in each tablet an effective dose (10 grains) of Acetylsalicylic Acid.

Each scored tablet contains: Acetylsalicylic Acid — 10 grains (0.65 gramme), Amino-Acetic Acid — 5 grains (0.32 gramme)

(Samples and Professional Literature on Request)

C. L. BENCARD, P.O. BOX 99, WESTON, ONTARIO

MEDICAL NEWS *in brief*

(Continued from page 52)

siding permanently in institutions, the figure would have been only a little more than one-third of this in 1901 and it will have increased by more than a half in about 15 years' time. Dr. Kohn also discusses the problem of terminal illness in hospitals. He says that the demand on hospitals resulting from fatal illness has increased by 35% over the last 10 years, apart from the fact that terminal illness is likely to last longer today than it used to.

Not only on leaving this world but also on entering it we make use of doctors, nurses and hospitals. The demand for hospital service in obstetric cases and in the care of the newborn is increasing all the time and constitutes part of the health problem.

If the population continues to increase as forecast, in 15 years' time Canadian doctors will have to visit 11 million patients at their home instead of 7 million today, and they will have to see 25 million patients at their offices instead of the 16 million they are seeing today. This increased population will require about 7,000 more doctors and something like 35,000 more beds in public hospitals, apart from tuberculosis and mental institutions. The supply of dentists will have to go up by 50% to cope with the increased number of visits to dentists, and similar increases will be required for nurses and other health personnel.

INTERNATIONAL SYMPOSIUM ON RHEUMATIC FEVER

The well-known National Institute of Cardiology of Mexico City has organized an international symposium on rheumatic fever which will take place in the City of Mexico from April 30 to May 3, 1956. Specialists from the United States, from England and from Brazil will join with Mexican colleagues in presenting this symposium. We note such names as Klemperer of New York, Bywaters of London, England, and Chavez of Mexico City among the faculty. Further information may be obtained from the offices of S.I.B.I.C., Avenue Cuauhtemoc No. 300, Mexico 7, D.F., Mexico.

CALIFORNIAN FORMULA FOR MEDICAL FEES

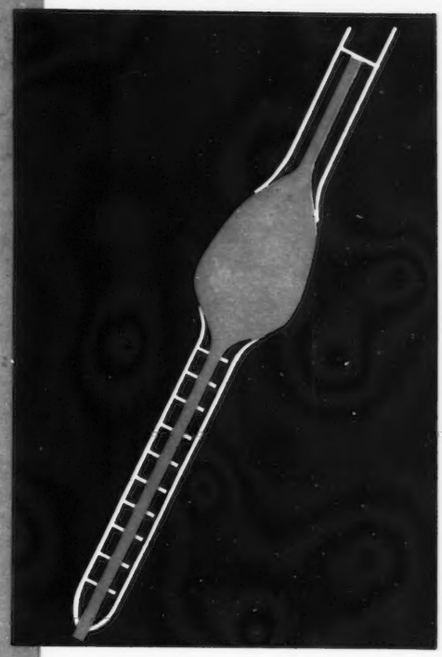
The New York Times of March 22 reports a new approach to fee charging by physicians. The Californian Medical Association has worked out a formula of relative values for various services. The Association makes no attempt to tell physicians and surgeons what specific fees they should charge, but does take a scale of values so that, for example, a physician who charges $8 for a first office visit should charge $4 for a follow-up office visit, $4 for a hospital visit, $8 for a first home visit and $10 for a home visit at night. The formula has also been worked out for specialists. Thus a surgeon who charges $200 for an appendectomy should charge $86 for taking out tonsils. If, however, he is prepared to do an appendectomy for $150, his fee for tonsillectomy should be only $64.20.

These relative prices are arrived at by using a system of conversion units, worked out by an actuarial firm on the basis of data supplied by the committee of the Association. For example, in the formula for physicians, a hospital visit or a follow-up office visit is given the unit value of 1. A first office visit is given the value of 2 and a home visit at night a value of 2.5. The committee of the Californian Medical Association has established a standard nomenclature and description for 1,000 different services; this should be of great value to insurance companies as well as to physicians.

ALCOHOLISM FIGURES UP IN CANADA

A press release from the Alcoholism Research Foundation of Ontario gives gloomy news about the estimated number of alcoholics in Canada. The Foundation considers that at the end of 1956 there will be 182,000 alcoholics in the country; this represents an increase of 30,000 over the last three years. The Foundation considers that there is an increase not only in gross numbers, but also in the alcoholism rate, which for 1956 would stand at 1,850 per 100,000 Canadians aged 20 and older.

Effective in the treatment of HYPOCHROMIC ANEMIA



"PROHEMA"

IT HAS BEEN SHOWN THAT:

- hypochromic anemia is essentially an iron deficiency disease;
- in many cases, administration of iron alone does not elicit a completely satisfactory response;
- when iron is given with liberal supplements of vitamins, improvement is greater and better sustained.

The value of Prohema in the treatment of hypochromic anemia is attributable to the fact that the formula is based on concepts long ago recognized empirically, and since substantiated by controlled clinical observations.

DOSAGE: One tablet three times daily after meals. In order to establish tolerance to iron, full dosage should be arrived at gradually: one tablet daily after the main meal for several days; then one tablet after breakfast and one after lunch for several days; finally, **one tablet three times daily after meals.**

"PROHEMA" TABLETS

TABLET No. 432 "Frosst"

Each sugar-coated tablet contains:

Ferrous sulphate (exsic.) (ferrous iron, 90 mg.)	0.3 G. (5 gr.)
Copper sulphate	1.6 mg. (1/40 gr.)
Thiamine hydrochloride	1 mg.
Riboflavin	1 mg.
Niacinamide	10 mg.
Ascorbic acid	25 mg.
Vitamin D	333 I.U.
Liver fraction 2, N.F.	67 mg.

For cases of secondary anemia showing evidence of faulty erythrocyte maturation and for megaloblastic anemia of pregnancy, Prohema Compound is available.

"PROHEMA" COMPOUND

TABLET No. 433 "Frosst"

Same formula as Prohema modified to contain:

Vitamin B_{12}	2.5 mcgm.
Folic Acid	0.67 mg.

Bottles of 100 tablets.

Frosst

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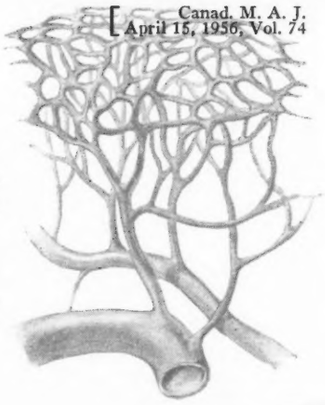
To Prevent and Arrest CAPILLARY BLEEDING



"STATIMO"

(BRAND OF CARBAZOCHROME SALICYLATE COMPLEX)

Bleeding from capillaries is encountered in numerous situations as an acute or chronic phenomenon. Such bleeding may occur widespread in skin and mucous membranes, or locally in the gastrointestinal tract, lungs, kidneys, bladder, brain, nose, etc.

The cause of such bleeding may be certain blood dyscrasias, hypertension, toxic chemicals and drugs. Frequently no cause may be found. In the absence of a coagulation defect it may be assumed that the bleeding from the capillary bed is due to increased capillary fragility and capillary permeability.

A medical approach to the management of such bleeding has recently received favorable attention. Carbazochrome salicylate complex by intramuscular injection or by oral administration has been found to arrest capillary bleeding in a substantial number of circumstances. It should be used especially when hemorrhage is persistent or where serious consequences may follow if bleeding is not promptly controlled, as, for example, in the retina and brain.

Statimo (carbazochrome salicylate complex) does not influence blood coagulability. Its effects appear to be limited to increasing capillary resistance and decreasing capillary permeability. The compound has no action on blood pressure and no apparent untoward effects.

"STATIMO" AMPOULES

AMPOULE No. 588 "Frosst"

Each 1.0 cc. ampoule contains:
Carbazochrome salicylate complex equivalent to carbazochrome.... 5 mg.

DOSAGE: 1.0 cc. by intramuscular injection every 2 to 4 hours until bleeding ceases.

Note
Intramuscular injection may be attended by some pain lasting a minute or two.

Boxes of three and twenty-five ampoules.

"STATIMO" TABLETS

TABLET No. 458 "Frosst"

Each sugar-coated tablet contains:
Carbazochrome salicylate complex equivalent to carbazochrome .... 2.5 mg.

DOSAGE: For maintenance therapy after bleeding has been controlled by injection or for initial and maintenance therapy, one tablet every 4 hours.

Bottles of 50 tablets.

References:

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Frosst

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MONTREAL CANADA

Mycostatin

SQUIBB NYSTATIN

the first safe antifungal antibiotic... now in three forms

Mycostatin is the first broadly effective antifungal antibiotic available to the medical profession. Recommended for the prevention and treatment of intestinal moniliasis, it is useful to prevent or treat infection of the lower intestine and anus, caused by Candida.

In cases of vaginal moniliasis Mycostatin Vaginal tablets are highly effective even in some long-standing cases resistant to all other therapy. Mycostatin Vaginal tablets act solely against fungi and do not destroy the normal and useful bacteria which enhance the safety mechanisms of the vagina.

Well tolerated—

Untoward reactions to Mycostatin Vaginal tablets are very rarely observed.

Non-sensitizing—

No allergic reactions to Mycostatin in any form have been encountered.

No development of resistance—

Candida albicans has not become resistant to Mycostatin either in vitro or in vivo.

See your Squibb representative for other forms of Mycostatin available soon.

VAGINAL TABLETS

highly effective in vaginal moniliasis. Each tablet contains 100,000 units of Mycostatin and 0.95 Gm. of Lactose. In packages of 15.

OINTMENT

highly effective in monilial infections of the skin. 100,000 units of Mycostatin per gram. In 1 oz. tubes.

ORAL TABLETS

highly effective in intestinal moniliasis. Each tablet contains 500,000 units of Mycostatin. In bottles of 12 and 100.

SQUIBB

MYCOSTATIN is a registered trade mark of E. R. Squibb & Sons of Canada, Limited, P.O. Box 599, Montreal, Que.

Report | from Carnation Research Laboratory

Carnation Research Laboratory, 8015 Van Nuys Boulevard, Van Nuys, California

General Research

For a half century, Carnation has conducted a continuous and expanding 5-phase research program in dairy and cereal products. Newest major research facility is the Carnation General Research Laboratory at Van Nuys, California—one of the most modern laboratories devoted exclusively to product research.

Qualified Scientific Staff

At the Van Nuys Laboratory alone, a large Carnation staff of graduate scientists represents an extremely broad background; fields covered include biology, bacteriology, parasitology, chemistry, biochemistry, organic chemistry, food technology, dairy husbandry, dairy technology, dairy bacteriology, dairy manufacturing and agricultural engineering.

Continuous, Planned Research protects the uniform high quality of Carnation products—both established products and new ones.

CARNATION PROTECTS YOUR RECOMMENDATION WITH CONTINUOUS 5-PHASE RESEARCH:

Carnation Research Laboratory,
Carnation Farms,
Carnation Plant Laboratories,
Carnation Central Product Control Laboratory,
Carnation-sponsored University and Association Research.

866

"from Contented Cows"

Has it happened to you, Doctor?

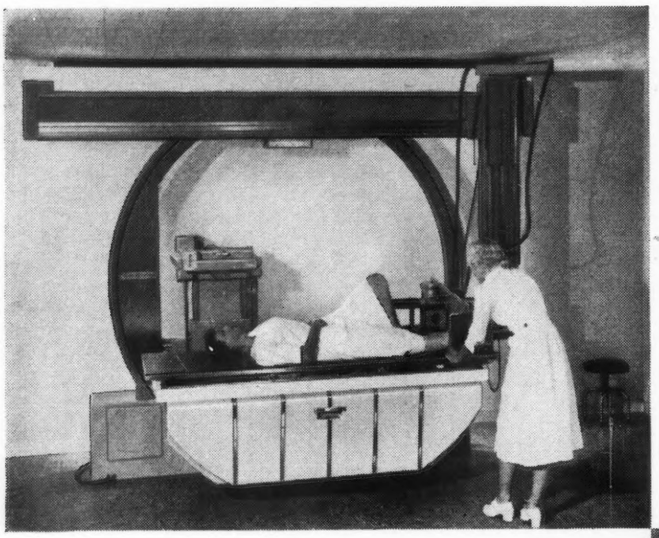
When you've heard (or overheard) people complaining about the "high cost" of medical care, have you sometimes wished there were a way to tell the facts about the *accomplishments* of modern medical care as they relate to costs?

For example, in today's busy world more than ever, time is money. This forthcoming advertisement tells people what the medicines you prescribe for them today can do in getting them well quicker, back on the job, earning money again.

Naturally, we hope that *you* will find time to read it. But the message is really directed to the general public—your patients, friends and neighbors. Along with other advertisements in this series, it presents facts that make clear the surprising value in good health that people get for each dollar they spend on prompt and proper medical care.

The advertisement shown here will appear in the May issue of Reader's Digest where thousands of people—hundreds in your neighborhood—will see it.

PARKE, DAVIS & CO., LTD.
TORONTO 14, ONTARIO



A 500-MA IMPERIAL

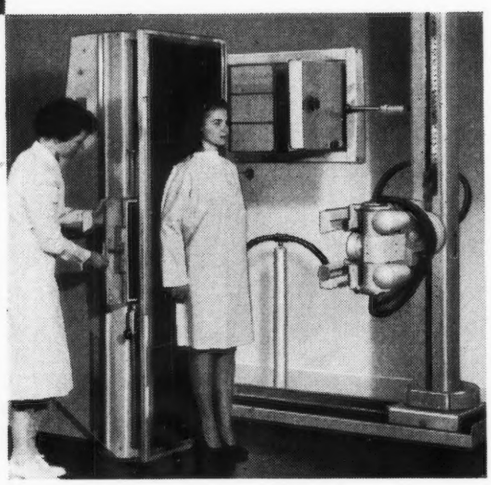
FOR JUST $20.00 A DAY

Yes—for this "working day" sum, you can enjoy all the advantages of a de-luxe Imperial 500-ma diagnostic x-ray unit, complete with spot-film device and phototiming.

A 200-MA MAXICON®

FOR JUST $7.50 A DAY

Truly professional facilities are afforded by this 200-ma, full-wave rectified, single-tube (over-under-table), hand-tilt diagnostic x-ray unit—yours for this small rental charge.



RENT

the x-ray apparatus you need through

G-E MAXISERVICE®

MANY factors affect the economics of x-ray equipment ownership. By actual cost analysis, you may find that General Electric's Maxiservice Rental Plan is exactly what you need.

There's no initial capital investment. You get modern apparatus equipped for the latest technics. More than that, this apparatus *stays* up to date, thanks to periodic replacement option. A single, monthly rental charge includes repair parts, tubes, maintenance and local property taxes. Your rental can be budgeted as operating expense against income from the apparatus.

Your G-E x-ray representative will be glad to give you facts and figures. Phone or write the nearest office of General Electric X-Ray Corporation, Limited — Montreal, Toronto, Vancouver, Winnipeg.

Progress Is Our Most Important Product

GENERAL ELECTRIC

ACHROMYCIN
liquid pediatric drops

now in handy, plastic dropper-bottle

Accurate dosage made easier. Same popular cherry flavor

A new unbreakable dropper-bottle makes it easier for mothers to accurately dispense ACHROMYCIN* Tetracycline Liquid Pediatric Drops. As a result, you can prescribe with greater confidence that your exact regimen will be followed. You can be certain, also, that even the tiniest tot will take to the cherry flavor of this product. The drops can be squeezed directly onto the child's tongue, or mixed with milk, fruit juice, or other liquids. Potency: 100 mg. per cc. (20 drops).

Of course, this is just one of the many dosage forms of ACHROMYCIN prepared for your convenience. From 21 types, you can choose the one best suited to the patient's needs. Each provides true broad-spectrum activity, and prompt control of infection with negligible side effects.

DAILY DOSAGE OF ACHROMYCIN Liquid Pediatric Drops is easy to remember, too: one drop per pound of body weight, divided into four equal doses, at meals and at bedtime.

A WIDELY USED form of tetracycline is ACHROMYCIN Capsules—the only dry-filled, sealed capsules on the market. Advantage: rapid and complete absorption, tamperproof contents. Available in potencies of 50, 100, and 250 mg.

MINOR INFECTIONS of the mouth and throat can often be controlled with ACHROMYCIN PHARYNGETS* Troches alone. (In severe infections, a systemic form of ACHROMYCIN should also be used.) Each cherry-flavored PHARYNGETS Troche supplies 15 mg. of Lederle's tetracycline.

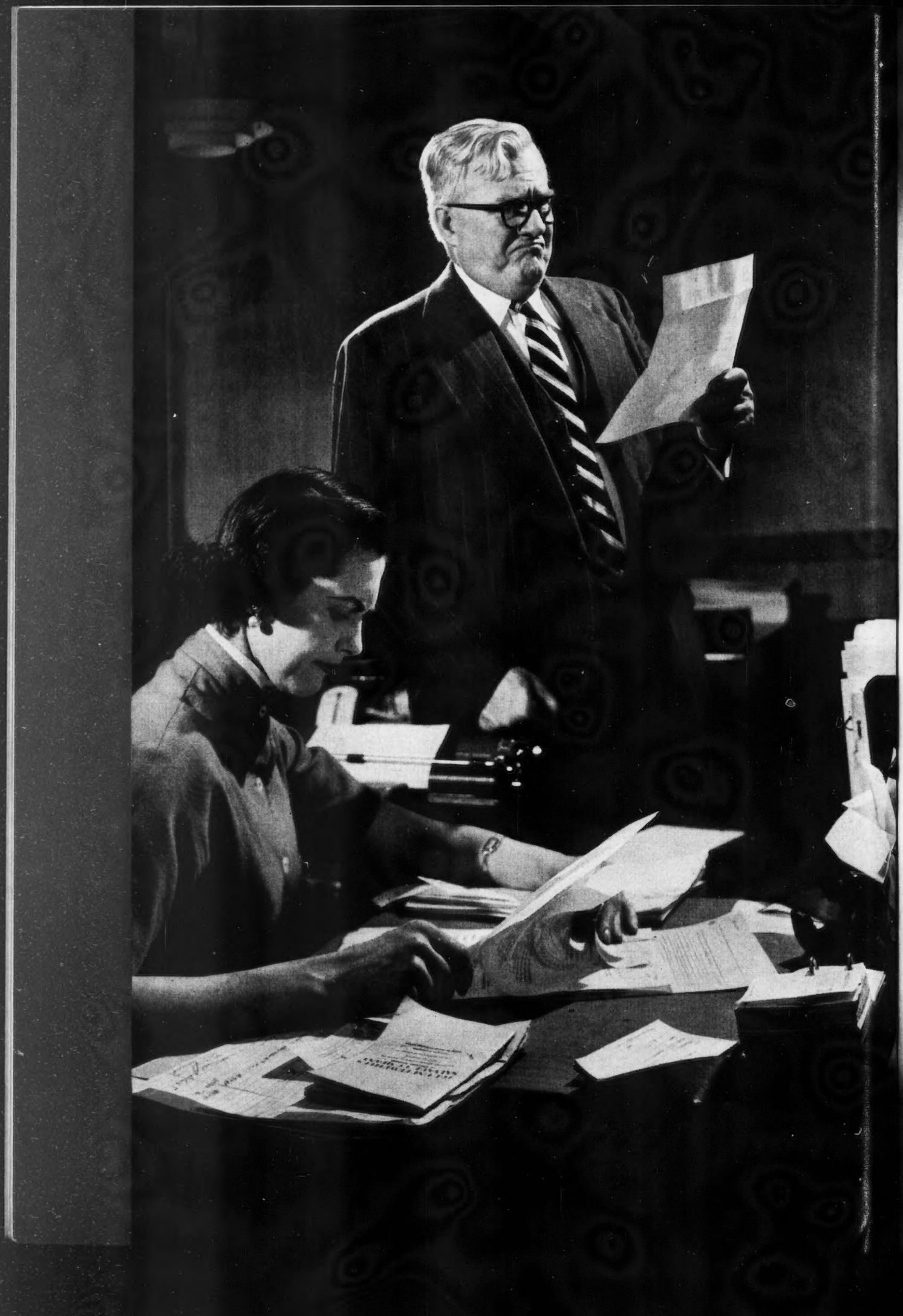
OCULAR INFECTIONS of many kinds, including various forms of conjunctivitis, respond to ACHROMYCIN Ointment (Ophthalmic) 1%. Bland, simple to apply, does not sting or burn. Mild infections may respond within 48 hours.

The Lederle representative or your local pharmacist will gladly tell you about the many other ACHROMYCIN *dosage forms.*

LEDERLE LABORATORIES DIVISION
NORTH AMERICAN Cyanamid LIMITED
MONTREAL, QUEBEC

Lederle

*REG. TRADE-MARK IN CANADA



"Fuss-budget"

Rush, worry, hurry...nerves and frustration.
To you falls the problem of smoothing out
the wrinkles of a troubled disposition.

Here is where

BUTISOL® SODIUM

BUTABARBITAL SODIUM, McNEIL

...helps...by providing daytime sedation
for the hyperactive nervous system.

Tablets imprinted,
'McNeil'

Dosage Forms:

Elixir Butisol Sodium, 0.2 Gm. (3 gr.)
per 30 cc. (1 fl. oz.), green.

- Tablets, 15 mg. (¼ gr.), lavender
- Tablets, 30 mg. (½ gr.), green
- Tablets, 50 mg. (¾ gr.), orange
- Tablets, 0.1 Gm. (1½ gr.), pink

New: Butisol R-A (Repeat Action Tablets) 30 mg.
15 mg. for immediate release and
15 mg. in coated core for delayed action

Samples on request.

McNEIL LABORATORIES, INC., PHILADELPHIA 32, PA.

Distributed through leading pharmacies by:
VanZant & Company, 357 College Street, Toronto, Ontario

INDEX TO ADVERTISERS

NOTIFICATION OF CHANGE OF ADDRESS

(Please forward *two* months prior to effective date)

Name .....
(Please Print)

Former Address .....
(Please Print)

.....

New Address .....
(Please Print)

.....

Please return to:

Canadian Medical Association,
150 St. George Street,
Toronto 5, Ontario.

Date submitted .....

THE

A search for the causative origin of asthma can indeed be a tedious one, but always the underlying factor—BRONCHOSPASM—can be treated immediately with FELSOL. Physicians in all parts of the world to which it has been introduced, have for years relied implicitly on FELSOL for the instant relief it gives in an attack of asthma no matter what the basic cause. FELSOL acts directly on the bronchial musculature and indirectly through the vagus and sympathetic.

...nged in effect

...erfect safety

...dopyrazolone 0.03 Gm.,
...Caffeine 0.10 Gm.,
... Brachycladii 0.01 Gm.

...literature on request

...H DRUG CO. LTD.
...EET EAST, MONTREAL

BRITISH FELSOL ... LONDON, E.C.I

They *both* enjoy mealtime with Pablum Cereals!

Every moment is a picture of happiness when Baby enjoys his food.

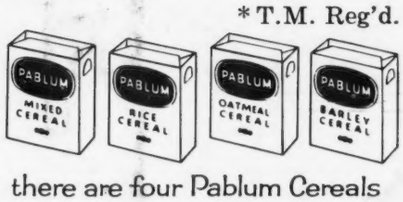
And as you know, a happy mealtime is important to a baby's health as well as his sense of security.

You can recommend Pablum Cereals for your small patients with complete confidence. The Pablum formula was developed by Canadian doctors. Like any good product, it has acquired imitators. *Pablum** has four varieties—Mixed, Barley, Oatmeal and Rice Cereals. Pablum Rice Cereal—in small and large sizes—is *hypoallergenic.*

* T.M. Reg'd.

It isn't real Pablum without this

PABLUM



there are four Pablum Cereals

Pablum Products – DIVISION OF MEAD JOHNSON & CO. OF CANADA LIMITED